

UNITED STATES OF AMERICA
 NATIONAL TRANSPORTATION SAFETY BOARD
 OFFICE OF ADMINISTRATIVE LAW JUDGES

* * * * *

In the matter of:

THE PUBLIC HEARING INVOLVING
 MOTORCOACH ACCIDENT AND SELECTED
 FEDERAL MOTOR CARRIER SAFETY
 ADMINISTRATION OVERSIGHT ISSUES
 WILMER, TEXAS
 SEPTEMBER 23, 2005

*
 *
 *
 * Docket No. HWY-05-MH-035
 *
 *
 *
 *

* * * * *

National Transportation Safety Board
 490 L'Enfant Plaza East, S.W.
 Washington, D.C. 20694

Tuesday,
 August 8, 2006

The above-entitled matter came on for hearing,
 pursuant to Notice, at 8:30 a.m.

BEFORE: KATHRYN O'LEARY HIGGINS, Chairwoman
 BRUCE MAGLADRY
 DR. VERN S. ELLINGSTAD
 BOB CHIPKEVICH
 MICHELE ANN McMURTRY, Hearing Officer

APPEARANCES:

Technical Panel:

GARY VAN ETTEN, Investigator-in-Charge
RON KAMINSKI
PAULA SIND-PRUNIER
LARRY YOHE
JOE PANAGIOTOU
MICHELE BECKJORD
PETE KOTOWSKI
JULIE PERROT

Other Safety Board members assisting with hearing:

GARY HALBERT
MARY JONES
KEITH HOLLOWAY
DON CHUPP
DENISE DANIELS

On behalf of Federal Motor Carrier Administration
(FMCSA):

ROSE McMURRAY, Associate Administrator for Policy
and Program Development

On behalf of National Highway Traffic Safety
Administration (NHTSA):

RON MEDFORD, Senior Associate Administrator,
Vehicle Safety

On behalf of Texas Department of Public Safety:

CAPT. DAVID PALMER

On behalf of Motor Coach Industries (MCI):

PAUL MURPHY, Director of Regulatory Compliance

On behalf of ArvinMeritor Corporation:

PAUL JOHNSTON, Senior Professional Engineer,
Director, North American Foundation Brake
Business Unit

APPEARANCES: (cont.)

On behalf of Bridgestone/Firestone:

BRIAN QUEISER, Manager, Product Analysis Department

On behalf of Sunrise Senior Living:

RICHARD SCHLOTT, Vice President of Regional
Operations

On behalf of United Motorcoach Association (UMA):

Mr. Ken Presley, Vice President For Industry
Relations

On behalf of American Bus Association (ABA):

NORM LITTLER, Executive Director, Bus Industry
Safety Council

Witnesses:

JASON SAULSBURY
DREW WOOD
OFFICER LEONARD ANTHONY SHAW
LARRY PLACHNO
MATTHEW A. DAECHER
MARTHA JILL AHRENS
ROBERT CRESCENZO
PHYLLIS PLANISEK
BONNIE BASS
BOB CAPSTICK
PAUL JOHNSTON
TONY SKIPPER
BRIAN QUEISER
EMMETT BEVINS
ROGER SAUL
PAUL MURPHY
LOUIS HOTARD
DANNY KNOTE
PAUL L. FORD
DAVID MAO

I N D E X

<u>ITEM</u>	<u>PAGE</u>
Opening Remarks, Chairwoman Kathryn O'Leary Higgins	13
Statement of the Issues	14
Introduction of Board of Inquiry	14
Introduction of Technical Panel	15
Introduction of participating Safety Board Members	16
Introduction of Parties	16
Purpose and Procedure of Hearing	17
Summary of Accident and Investigative Activities by Gary Van Etten, Investigator-in-Charge	20
TOPIC 1: WILMER, TEXAS, MOTORCOACH FIRE DESCRIBED BY EYEWITNESSES	
Introduction and Swearing in of Panel 1, Jason Saulsbury, Drew Wood, Officer Leonard Shaw by Michele Ann McMurtry	31
Testimony and Questioning of Jason Saulsbury by Ron Kaminski	32
Testimony and Questioning of Drew Wood by Ron Kaminski	34
Testimony and Questioning of Officer Leonard Shaw by Ron Kaminski	36
Questioning of Panel 1 by Chairwoman Higgins	39
TOPIC 2: SCOPE OF BUS FIRE PROBLEMS	
Introduction and Swearing in of Panel 2, Larry Plachno, Matthew A. Daecher, Martha Ahrens, Robert Crescenzo, Phyllis Planisek and Bonnie Bass by Michele Ann McMurtry, Hearing Officer	42
Purpose of Panel 2 by Paula Sind-Prunier	45

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 2 by Larry Yohe, Technical Panel	
Larry Plachno	46
Questioning of Panel 2 by Paula Sind-Prunier, Technical Panel	
Larry Plachno	55
Martha Ahrens	55
Matthew A. Daecher	57
Martha Ahrens	62
Robert Crescenzo	64
Phyllis Planisek	67
Bonnie Bass	69
Questioning of Panel 2 by Larry Yohe, Technical Panel	
Robert Crescenzo	70
Phyllis Planisek	72
Questioning of Panel 2 by Rose McMurray, FMCSA	
Matthew A. Daecher	73
Martha Ahrens	74
Questioning of Panel 2 by Ron Medford, NHTSA	
Martha Ahrens	75
Larry Plachno	76
Robert Crescenzo	77
Phyllis Planisek	79
Larry Plachno	79

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 2 by Brian Queiser, Bridgestone	
Larry Plachno	81
Questioning of Panel 2 by Ken Presley, UMA	
Robert Crescenzo	81
Questioning of Panel 2 by Dr. Vern Ellingstad, Board of Inquiry	
Robert Crescenzo	83
Phyllis Planisek	84
Martha Ahrens	84
Bonnie Bass	86
Questioning of Panel 2 by Bruce Magladry, Board of Inquiry	
Martha Ahrens	87
Matthew A. Daecher	88
Larry Plachno	89
Robert Crescenzo	89
Phyllis Planisek	90
Phyllis Planisek and Robert Crescenzo	91
Questioning of Panel 2 by Michele Ann McMurtry, Board of Inquiry	
Phyllis Planisek and Robert Crescenzo	91
Matthew A. Daecher	92
Robert Crescenzo	93

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 2 by Michele Ann McMurtry, Board of Inquiry	
Phyllis Planisek	93
Bonnie Bass	93
Martha Ahrens and Matthew A. Daecher	94
Larry Plachno	94
Questioning of Panel 2 by Chairwoman Higgins	
Martha Ahrens	95
Robert Crescenzo	96
Phyllis Planisek	98
Robert Crescenzo	98
Matthew A. Daecher	100
Larry Plachno	101
Robert Crescenzo	101
Bonnie Bass	103
Martha Ahrens	104
Questioning of Panel 2 by Ron Medford, NHTSA	
Phyllis Planisek and Robert Crescenzo	106
TOPIC 3: SOURCE OF WILMER, TEXAS, MOTORCOACH FIRE, AND FIRE PROPAGATION AND FIRE SUPPRESSION	
Introduction of Topic 3 by Chairwoman Higgins	106
Introduction and Swearing in of Panel 3, Bob Capstick, Paul Johnston, Tony Skipper, Brian Queiser, Emmett Bevins and Roger Saul by Michele Ann McMurtry, Hearing Officer	107

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 3 by Larry Yohe, Technical Panel	
Bob Capstick	110
Paul Johnston	119
Bob Capstick	126
Paul Johnston	127
Bob Capstick	128
Tony Skipper	128
Paul Johnston	136
Bob Capstick	136
Tony Skipper	137
Bob Capstick	141
Paul Johnston	142
Questioning of Panel 3 by Joseph Panagiotou, Technical Panel	
Emmett Bevins	143
Brian Queiser	147
Bob Capstick	149
Roger Saul	153
Bob Capstick	159
Emmett Bevins	162
Questioning of Panel 3 by Paul Murphy, MCI	
Emmett Bevins	169

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 3 by Norm Littler, ABA	
Emmett Bevins	171
Questioning of Panel 3 by Richard Schlott, Sunrise Senior Living	
Bob Capstick	173
Questioning of Panel 3 by Ron Medford, NHTSA	
Emmett Bevins	174
Questioning of Panel 3 by Rose McMurray, FMCSA	
Tony Skipper	175
Bob Capstick	178
Paul Johnston	180
Bob Capstick, Paul Johnston and Tony Skipper	180
Emmett Bevins	181
Brian Queiser	182
Questioning of Panel 3 by Bob Chipkevich, Board of Inquiry	
Brian Queiser	184
Roger Saul	187
Questioning of Panel 3 by Dr. Vern Ellingstad, Board of Inquiry	
Bob Capstick	187
Emmett Bevins	190
Roger Saul	191

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 3 by Bruce Magladry, Board of Inquiry	
Bob Capstick, Paul Johnston, Tony Skipper and Brian Queiser	192
Questioning of Panel 3 by Michele McMurtry, Hearing Officer, Board of Inquiry	
Emmett Bevins	196
Brian Queiser	196
Questioning of Panel 3 by Chairwoman Higgins, Board of Inquiry	
Bob Capstick, Paul Johnston, Tony Skipper and Brian Queiser	196
Emmett Bevins	200
Paul Saul	201
Paul Saul and Emmett Bevins	205
Questioning of Panel 3 by Bob Chipkevich, Board of Inquiry	
Tony Skipper	206
TOPIC 4: MOTORCOACH EVACUATION IN A FIRE	
Introduction and Swearing in of Panel 4, Roger Saul, Paul Murphy, Louis Hotard, Paul L. Ford, Danny Knote and David Mao by Michele Ann McMurtry, Hearing Officer	207
Purpose of Panel 4 by Ron Kaminski	209
Questioning of Panel 4 by Ron Kaminski, Technical Panel	
Roger Saul	210

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 4 by Ron Kaminski, Technical Panel	
Paul Murphy	215
Louis Hotard	221
Paul L. Ford	227
Danny Knoté	230
Roger Saul	236
Questioning of Panel 4 by Ron Medford, NHTSA	
Paul L. Ford	237
Questioning of Panel 4 by Ken Presley, UMA	
Paul Murphy	238
Questioning of Panel 4 by Norm Littler, ABA	
Roger Saul	240
Danny Knoté	242
Paul L. Ford	244
Questioning of Panel 4 by Dr. Vern Ellingstad, Board of Inquiry	
Danny Knoté	248
Roger Saul	250
Paul Murphy	250
Louis Hotard	252

I N D E X (cont.)

<u>ITEM</u>	<u>PAGE</u>
Questioning of Panel 4 by Bruce Magladry, Board of Inquiry	
Danny Knote and David Mao	253
Paul L. Ford	255
Questioning of Panel 4 by Michele Ann McMurtry, Hearing Officer, Board of Inquiry	
Paul L. Ford	255
Paul Murphy	257
Questioning of Panel 4 by Chairwoman Higgins	
Roger Saul	260
Paul L. Ford	261
Paul Murphy	262
Danny Knote	264
Roger Saul	266
Danny Knote	266
Louis Hotard	268
Paul Murphy	269
Roger Saul	270
Adjourn	

P R O C E E D I N G S

(8:30 a.m.)

CHAIRWOMAN HIGGINS: Good morning and welcome. I am Kitty Higgins, a member of the National Transportation Safety Board and Chairman of this Board of Inquiry.

The National Transportation Safety Board is an independent federal agency charged by Congress to investigate accidents in all modes of transportation and to provide independent oversight of government and private entities involved in transportation.

Today we begin a two day hearing to consider the facts and circumstances surrounding a fire on a motor coach near Wilmer, Texas, on September 23, 2005, in which 23 residents of an assisted living facility died during the evacuation in advance of landfall by Hurricane Rita. The purpose of this hearing is to learn additional facts, conditions and circumstances to supplement information the Safety Board uncovered during its on scene investigation in September of 2005.

I want to thank each of you for attending this important hearing. The traveling public relies on the Government to keep a watchful eye on the safety of our vehicle and transportation system. Today's hearing is a demonstration of our commitment to do just that.

I understand that many family members are watching

1 this hearing by webcast, and, on behalf of the Safety Board, I
2 want to offer my condolences and support to the families whose
3 loved ones died or were injured that day. We cannot change
4 what happened, but this hearing will help the Safety Board
5 determine the facts and help us keep it from happening again.

6 Over the course of the next two days, we will focus
7 on the following issues:

8 The facts and circumstances of the fire on the 54
9 passenger motor coach traveling northbound on Interstate 45 in
10 Texas, with 44 passengers and a driver, as part of the
11 emergency evacuation in anticipation of Hurricane Rita;

12 The scope of bus fires in this country;

13 How motorcoach fires propagate and how they might be
14 suppressed;

15 Evacuations of motorcoaches;

16 Planning for the transportation of passengers with
17 special needs during emergency evacuations;

18 Government oversight of motorcoach operators and bus
19 brokers; and

20 Vehicle inspections and driving training.

21 This hearing will assist the Safety Board in
22 determining the probable cause of the accident and in issuing
23 safety recommendations that may prevent similar accidents in
24 the future.

25 At this point, I would like to introduce other

1 members of the Safety Board staff.

2 Assisting me on the Board of Inquiry will be, to my
3 left, Mr. Bruce Magladry, Acting Director of the Office of
4 Highway Safety. To my right, Dr. Vern Ellingstad, Director of
5 the Office of Research and Engineering, to my far right,
6 Mr. Bob Chipkevich, Director of Railroad, Pipeline and
7 Hazardous Materials Investigations, and to my far left,
8 Ms. Michele McMurtry, the Hearing Officer who is with the
9 Office of Highway Safety.

10 Tomorrow, we will be joined by Elaine Weinstein,
11 Director of the Office of Safety recommendations and
12 Communications, and by Member Debbie Hersman.

13 The Board of Inquiry will be assisted by a Technical
14 Panel consisting of Board staff from the Offices of Highway
15 Safety, Research and Engineering, and Safety Recommendations
16 and Communications. Members of the Technical Panel are
17 Mr. Gary Van Etten, Investigator-in-Charge, Office of Highway
18 Safety; Mr. Ron Kaminski, Survival Factors Group Chairman,
19 Office of Highway Safety; Ms. Paula Sind-Prunier, Human
20 Performance Group Chairman, Office of Highway Safety; Mr. Larry
21 Yohe, Vehicle Factors Group Chairman, Office of Highway Safety;
22 Mr. Joe Panagiotou, Fire and Explosion Investigator, Office of
23 Research and Engineering; Ms. Michele Beckjord, Project
24 Manager, Office of Highway Safety; Mr. Pete Kotowski, Motor
25 Carrier Group Chairman, Office of Highway Safety; and Ms. Julie

1 Perrot, Transportation Safety Specialist for Highway, Office of
2 Safety Recommendations and Communications.

3 Other Safety Board staff members assisting with this
4 hearing are Mr. Gary Halbert, NTSB General Counsel; Ms. Mary
5 Jones, Office of Highway Safety; Mr. Keith Holloway, Office of
6 Public Affairs; Mr. Don Chupp, Office of Transportation
7 Disaster Assistance; and Ms. Denise Daniels, my special
8 assistant.

9 In accordance with the Safety Board's procedural rule
10 governing public hearings, the designated parties to a public
11 hearing including those persons, governmental agencies,
12 companies and associations whose participation in the hearing
13 is deemed necessary in the public interest and whose special
14 knowledge will contribute to the development of pertinent
15 evidence. There are nine such designated parties in attendance
16 today, and I will introduce the parties and their spokespersons
17 for the record.

18 For the Federal Motor Carrier Safety Administration,
19 Ms. Rose McMurray, Associate Administrator for Policy and
20 Program Development.

21 For the National Highway Traffic Safety
22 Administration, Mr. Ron Medford, Senior Associate
23 Administrator, Vehicle Safety.

24 For the Texas Department of Public Safety, Capt.
25 David Palmer.

1 For the bus manufacturer, MCI, Mr. Paul Murphy,
2 Director of Regulatory Compliance.

3 For the Brake manufacturer, ArvinMeritor Corporation,
4 Mr. Paul Johnston, Senior Professional Engineer, Director,
5 North American Foundation Brake Business Unit.

6 For the tire manufacturer, Bridgestone/Firestone,
7 Mr. Brian Queiser, Manager, Product Analysis Department.

8 For Sunrise Senior Living, Mr. Richard Schlott, Vice
9 President of Regional Operations.

10 For the United Motorcoach Association, Mr. Ken
11 Presley, Vice President for Industry Relations.

12 For the American Bus Association, Mr. Norm Littler,
13 Executive Director, Bus Industry Safety Council.

14 A Safety Board public hearing is a fact gathering
15 exercise. We will spend our time examining current safety
16 problems and studying possible solutions. The Safety Board
17 will use information from this hearing to develop possible
18 recommendations in the final report as part of our
19 investigation of this accident and the problem with bus fires.

20 Witnesses have been named who will serve on panels
21 developed to specific topic areas. Witnesses testifying at
22 this hearing will be introduced when they begin their
23 testimony. They have been selected of their ability to provide
24 the best available in on the issues. The Technical Panel will
25 question the witnesses first. I will then call upon each

1 Party's spokesperson, who may question the witnesses. We will
2 conclude with questions from each member of the Board of
3 Inquiry. Hard copies of the witness and exhibit list and
4 electronic copies of items already in the docket, are available
5 from Keith Holloway in the press room.

6 I will permit a second round of questions if the
7 record needs to be clarified or if some new matter has been
8 raised and requires further exploration. If one of the parties
9 would like a second round of questions, the designated
10 spokesperson should make the request and state the reason for
11 the request. I would expect the second round of questions to
12 be very brief with no repetition of previous questions.

13 A witness who has finished testifying may be subject
14 to recall should the need arise. Therefore, witnesses should
15 not leave the hearing without first checking with the
16 Investigator-in-Charge or the Hearing Officer about the
17 likelihood of being recalled for additional questioning.

18 This hearing is not adversarial. There will be no
19 adverse parties or interests, no formal pleadings or cross-
20 examination. The Safety Board will not determine liability and
21 questions directed to the issues of liability will not be
22 permitted. As Chairman of the Board of Inquiry, I will make
23 all rulings on the admissibility of evidence, and my rulings
24 will be final. I request that all parties and the Technical
25 Panel refrain from asking questions that are narrative-type

1 questions that is more in the nature of testimony than a
2 question, are beyond the scope of the issues agreed upon, are
3 repetitive or are irrelevant, immaterial or argumentative.

4 During this hearing, we will not attempt to determine
5 the probable cause. Such analysis and determinations will be
6 adopted later by the full Safety Board after all of the
7 evidence has been gathered. That report will be discussed
8 during a public meeting known as a sunshine meeting. At that
9 time, the Safety Board will consider the evidence, review the
10 analysis and determine the probable cause in a final report.

11 Following the hearing, the parties are invited to
12 submit comments to the Safety Board, regarding conclusions they
13 believe should be drawn from the evidence and what preventative
14 measures should be taken. Please submit 15 copies of your
15 comments to the Board within 30 calendar days after receipt of
16 a transcript of the hearing. Please also submit one copy of
17 your comments to each of the other parties, as well as to
18 parties to the field phase of the investigation. All comments
19 received by the Safety Board will be made part of the public
20 docket.

21 A transcript of the public hearing and all exhibits
22 entered in the record will become part of the public record in
23 the Safety Board's Washington office and will be available for
24 inspection in the office. Anyone wanting to purchase the
25 transcript, including the parties to this hearing, should

1 contact the Court Reporter directly. In addition, the Safety
2 Board's highway reports are published on our website at
3 www.nts.gov.

4 I would like to use this opportunity to publicly
5 thank all of the parties for their cooperation and support,
6 and for their willingness to work with us on the investigation
7 of this accident. According to a government report, Hurricanes
8 Katrina and Rita killed more than 1300 people, caused more than
9 \$80 billion in damage to over 90,000 square miles, and forced
10 mass evacuations from five Gulf Coast States. Bus and
11 motorcoach transportation will be an important component of
12 emergency planning for 2006 and beyond. I believe this hearing
13 will yield important information that will help the Safety
14 Board craft recommendations to improve the safety of
15 transportation using these vehicles.

16 We will begin the hearing with a statement from the
17 Investigator-in-Charge of the accident, Mr. Gary Van Etten, who
18 will summarize certain facts about the accident and the
19 investigative activities that have taken place.

20 Mr. Van Etten, will you please begin your
21 presentation?

22 MR. VAN ETTEN: Thank you. Good morning. We can
23 start the -- there we go.

24 During the preparation for Hurricane Katrina
25 evacuation in August 2005, officials from the Sunrise Senior

1 Living Corporation, the parent company of Brighton Gardens and
2 Nursing Facility in Bellaire, Texas, discovered the Bus Bank in
3 Chicago, Illinois, by conducting an Internet search for bus
4 transportation. The Bus Bank provided arrangements for two
5 motorcoaches to evacuate patients from their facility in
6 coastal Louisiana, although Global Limo, the accident carrier
7 in this investigation, provided buses for other facilities who
8 was not involved in the Brighton Gardens move.

9 During the early days of September of 2005, the
10 National Weather Service was predicting a severe storm for the
11 Gulf Coast States. Memories of the devastation created by
12 Hurricane Katrina, which struck the coast of Louisiana and
13 Mississippi, prompted people in Texas to begin preparing for
14 this storm which eventually became Hurricane Rita.

15 On September 21st, the Mayor of Galveston, Texas
16 issued evacuation orders for the city and surrounding areas.
17 Texas Governor Perry also urged residents to evacuate the
18 coastal areas.

19 Brighton Gardens, pictured here, owned several
20 wheelchair accessible vans but the Brighton officials said that
21 they were insufficient to transport the patients for long
22 distances. Since the parent company had previous used the Bus
23 Bank for evacuation transportation, they called them again.
24 They were told that the 300 buses, the Federal Emergency
25 Management Agency had contracted for evacuation purposes were

1 all committed. The Bus Bank called them several minutes later
2 and indicated that they had found a carrier, and that carrier
3 was Global Limo.

4 On September 21st, they negotiated a contract with
5 Bus Bank for two motorcoaches to transport their patients at
6 Brighton Gardens to two of their facilities in Dallas. The
7 contract called for the patients to be transported from,
8 Bellaire, Texas on September 22nd at 10:00 a.m. and were
9 scheduled to arrive in Dallas between 2:00 p.m. and 3:00 p.m.

10 On September 22nd, the Governor ordered the
11 contraflow of 125 miles of traffic on Interstate 45 to
12 accommodate the increase of traffic leaving the coastal cities.

13 The driver from Global departed from Farr, Texas,
14 near McAllen, about 4:40 a.m., on September 22nd, and arrived
15 at Brighton Gardens in Bellaire about 11:00 a.m., a trip of
16 about 361 miles.

17 While the staff prepared the patients for transcript,
18 the motorcoach driver dosed in the motorcoach similar to the
19 one shown here, for about two hours. About 1:30 p.m., the
20 nursing staff and assisting firemen began loading the 27 non-
21 ambulatory patients onto the motorcoach and storing their 22
22 wheelchairs, 5 walkers and 18 medical oxygen cylinders. Two of
23 the elderly patients required oxygen. The remaining 10
24 patients, 1 family member and 6 nursing staff boarded the
25 vehicle. It took two hours to complete the loading of the

1 coach, and the coach departed at 3:30 p.m.

2 In an attempt to avoid heavy traffic on I-45, which
3 is the most direct route to Dallas, the driver took Interstate
4 610 East to Highway 59 North, and then back to I-45. Just
5 before getting on I-45, they stopped to exchange empty oxygen
6 cylinders in the passenger compartment with full cylinders from
7 the luggage compartment. As they drove north on I-45, they
8 stopped for gas near Huntsville, Texas, and stopped again about
9 10 minutes later and exchanged some more oxygen cylinders.
10 They then continued on towards Dallas.

11 About 3:15 a.m. on September 23rd, at the overpass
12 near Exit 239, the motorcoach driver said he heard the right
13 rear tire go flat. Shown here is the beginning of the tire
14 mark left by that flat tire. He continued for a little more
15 than a mile trying to find a suitable location on the right
16 shoulder to stop without creating further traffic congestion.
17 While the driver was looking for a place to stop, a nursing
18 home staff member called 911 for assistance, and the Rice
19 police officer was dispatched.

20 The coach driver finally stopped on the right
21 shoulder near milepost marker 240 near the City of Rice, and
22 the police officer arrived shortly thereafter, along with a
23 highway construction worker from a nearby construction site. A
24 tow truck driver was summoned and arrived about 4:30 a.m. The
25 tow truck driver took about five minutes to change the tire.

1 This is the right rear flat tire that was exchanged
2 near Rice. The red arrow shows the flat spot on the tire with
3 the steel belt and cords exposed.

4 The yellow arrows show the flat spot on the steel rim
5 and the corresponding cut in the tire.

6 The tow truck driver indicated that when he changed
7 the right tire, he did not feel any excessive heat and did not
8 notice anything out of the ordinary about the tire. The flat
9 tire was stored in the front of the vehicle.

10 This is a side view of the flat tire that clearly
11 shows a flat spot indicative of a locked wheel that was dragged
12 along the pavement. Both the tow truck and the motorcoach
13 departed the highway at Exhibit 242, about 200 feet away, where
14 a nursing home staff member paid the bill. They then continued
15 north toward Dallas.

16 At approximately 6:04 a.m., a grass fire in the
17 center median of I-45 was reported to the Ferris Volunteer Fire
18 Department. The fire was about 3.2 miles south of the eventual
19 site of the motorcoach fire. The fire was quickly extinguished
20 by the fire department upon their arrival.

21 This is a picture of a metal object found in that
22 burned area. Safety Board investigators believe it to be a
23 bearing that may have come from the motorcoach's rear right
24 wheel and started the grass fire.

25 About 2,100 feet south of the Mars Road Exit, a

1 motorist also traveling north on I-45, noticed the right rear
2 wheel of the motorcoach was glowing red hot with some sparks
3 emanating from the wheel. The motorcoach was in the far left
4 lane. The motorist was able to get in front of the motorcoach
5 and bring it to a stop. He exited his vehicle and went to the
6 bus driver's window and tried to tell him about the problem
7 with the right rear wheel. He was unsure the driver understood
8 because the coach driver spoke only Spanish. The motorist then
9 departed. The coach driver began to move the vehicle across
10 the crowded lanes of travel and to bring the vehicle to a stop
11 north of the Mars Road Exit.

12 You can see in this picture, the tire marks from the
13 locked rear right wheel that's indicated by the red arrow.

14 Shown here are the tire and scrape marks leading to
15 the motorcoach's final stopping point, and the burned
16 motorcoach and grass area are also shown in the upper part of
17 the picture.

18 Now I'm going to walk you through a sequence of
19 events from the time the motorcoach stopped. The times I'm
20 about to reference reflect estimates and inferences drawn from
21 materials collected to date. Because the investigation is
22 ongoing, these times are subject to change until the final
23 report is adopted by the Safety Board.

24 About 6:05 a.m., the coach stopped. The driver and
25 two staff members exited and went to examine the right rear

1 wheel. They noted it was on fire, and they returned to the
2 interior and urged the occupants to quickly exit. The driver
3 only spoke Spanish and was not immediately understood.
4 However, the nursing staff realized that an emergency existed
5 and began to assist the patients out of the vehicle. Many of
6 the occupants resisted leaving.

7 At 6:07 a.m., a 911 call made by a passing motorist
8 was logged by the Dallas County and Wilmer dispatchers. This
9 photograph was taken by a motorist, shortly after the coach
10 came to a stop and obtained by the NTSB through KTVT News.
11 Motorists were stopping and assisting the nursing staff in
12 trying to get the patients out of the vehicle. Some tried to
13 break the windows while others tried to pull people out the
14 front door.

15 The following images are taken from a video from KTV
16 Television, CBS News in Dallas-Fort Worth. These images show
17 the progression of the fire and the resulting smoke. The times
18 in the upper left-corner are from the portions of the video
19 that cover this accident. The Safety Board estimates that this
20 sequence started about 6:08 a.m., approximately 3 minutes after
21 the bus stopped. This image, looking at the rear of the bus,
22 shows the fire on both sides.

23 Less than 15 seconds later, the entire rear of the
24 bus is engulfed in flames. In 4 more seconds, from a slightly
25 different view, the flames can be seen progressing towards the

1 front of the bus. In less than a minute into the video, thick
2 smoke can be seen coming out of the front of the bus. Roughly
3 a minute and a half into the video and approximately 4 1/2
4 minutes after the bus stopped, the smoke is permeated the
5 interior of the bus making rescue efforts difficult.

6 Within about another minute or approximately five and
7 a half minutes after the bus stopped, the flames are nearly to
8 the front of the bus. Almost 3 minutes later, and about 5
9 minutes into the video, this image shows an intense burst of
10 fire, probably caused by an oxygen cylinder either failing or
11 venting. At 6 1/2 minutes into the video, or approximately
12 6:15 a.m., the motorcoach is almost entirely engulfed in
13 flames. The traffic was heavy, and the first fire department
14 vehicles arrive at the scene at about 6:24 a.m.

15 Shown here is the burned shell of the motorcoach
16 after the fire had been extinguished at the scene. Shown here
17 is the right rear tag axle where it is believed the fire
18 originated. The yellow circle shows a large inner wheel
19 bearing adjusting nut which is non-concentric with the wheel
20 spindle and touching the inter hub at about the 11:00 position
21 as indicated by the red arrow. The green arrow points to a
22 flattened area on a rim indicative of a wheel locked and
23 sliding on pavement. The blue arrow points to a flattened
24 wheel bearing that will be seen more closely in the next slide.

25 The blue arrow points to the flattened wheel bearing

1 lodged between the spindle and the rim from the previous slide.
2 The yellow arrow shows the bearing assembly from the right rear
3 tag axle wheel mounted on the spindle. Note that these
4 bearings are fused together. The red error shows the flattened
5 wheel bearing indicative of its grinding against the wheel.
6 Shown here are several wheel bearings taken from the right rear
7 tag axle wheel of the motor coach. They are fused together and
8 flattened indicating that they were subjected to high heat and
9 metal to metal wear.

10 This not to scale schematic shows the relationship
11 between the motorcoach's tire, side wall, floor and fuel lines.
12 If a fire initiates at a tire and burns through the side wall,
13 the heat and smoke can gain entry into the interior of the
14 motorcoach through the venting system.

15 Shown here are the oxygen cylinders that were found
16 in the passenger and luggage compartments of the accident
17 motorcoach. Seven relatively oxygen cylinders were retrieved
18 from the luggage bay. They had little fire damage. Eleven
19 cylinders were retrieved from the passenger compartment. These
20 had extensive fire damage, and all of them had released their
21 oxygen. Safety Board research and calculations show that the
22 lowest temperature at which they would have begun to release
23 oxygen was about 260 degrees Fahrenheit.

24 This picture is of a fire extinguisher on an exemplar
25 MCI motorcoach. It is located under the aisle seats, second

1 row on the right. It is a 5 pound dry chemical extinguisher
2 secured with a double latching locking device. This type of
3 fire extinguisher and securement device meets the requirements
4 of 49 C.F.R. 393.95. The accident driver stated that he was
5 unable to unlatch the fire extinguisher at the time of the
6 incident.

7 To summarize, during the evacuation from Hurricane
8 Rita on September 23, 2005, a 1998 MCI motorcoach with 44
9 passengers and a driver caught fire and 23 elderly passengers
10 died in the accident. After this accident, the Safety Board
11 began looking into other incidents of bus fires.

12 On July 15, 2003, in Charlestown, West Virginia, a
13 1989 MCI motorcoach experienced a brake fire during which three
14 senior citizens were injured, two while exiting through
15 windows. This is a photograph of the Charlestown bus. Note
16 the thick black smoke coming from the vehicle. This photograph
17 shows the damage to the motorcoach and the burned left tag axle
18 tire as indicated by the yellow arrow.

19 On August 16, 2005, in Meriden, Connecticut, a 2002
20 Van Hool motorcoach with 45 passengers experienced a right rear
21 wheel fire. Although the driver did not speak English, and
22 there was a delay getting people off the motorcoach, none one
23 was injured. This is a post accident view of that motorcoach.

24 On October 23, 2005, a Dina motorcoach with 40
25 passengers experienced a left rear tag axle fire. The driver

1 attempted to extinguish the fire by using the fire extinguisher
2 on his coach, a fire extinguisher from another motorcoach, and
3 the responding police officer used a fire extinguisher from his
4 vehicle to try to extinguish the fire. There was no delay in
5 passenger egress and there were no injuries. This is a post
6 accident picture of that left rear tag axle.

7 On December 6, 2005, in Banning, California, a Van
8 Hool motorcoach transporting 61 passengers experienced a fire
9 in the right rear of the bus. No injuries resulted in this
10 accident. This is a post accident picture of the left rear of
11 that motorcoach.

12 On October 4, 2005, in Lampasas, Texas, a school bus
13 experienced an engine fire. The ninth grade athletes on board
14 were able to evacuate the bus without injury. This is a post
15 accident picture of the right rear of the school bus.

16 On May 13, 2006, in Wilsonville, Oregon, a Prevost
17 motorcoach, transporting a high school band, experienced a
18 right rear tag axle tire fire. No one was injured, and we have
19 no pictures of that burned bus.

20 So as you can see, these bus fires involve various
21 bus manufacturers and have several different sources of the
22 fire.

23 This concludes the IIC's statement.

24 CHAIRWOMAN HIGGINS: Thank you. We will now hear
25 from our first panel. And our Hearing Officer will swear them

1 in.

2 MS. McMURTRY: Thank you, Member Higgins. Will -- in
3 the interest of time, I'm going to swear in each panel
4 together. Mr. Saulsbury, Mr. Wood and Officer Shaw, would you
5 raise your right hand?

6 (Whereupon,

7 JASON SAULSBURY, DREW WOOD AND OFFICER LEONARD SHAW
8 were called as witnesses, and having been first duly sworn,
9 were examined and testified as follows:)

10 MS. McMURTRY: Mr. Saulsbury, would you state your
11 full name, your current employer, your title and your company
12 address, your company address?

13 MR. SAULSBURY: Jason Robert Saulsbury. I'm an
14 electrician. I work for Walker Engineering.

15 MS. McMURTRY: And how long have you been in your
16 current position?

17 MR. SAULSBURY: About seven years.

18 MS. McMURTRY: Mr. Wood, would you state your full
19 name, your current employer, your title and your company
20 address?

21 MR. WOOD: Drew William Wood, electrician. I work
22 for Walker Engineering.

23 MS. McMURTRY: Okay. And how long have you been in
24 your current position?

25 MR. WOOD: Four years.

1 MS. McMURTRY: And, Officer Shaw, would you state for
2 the record, your full name, your current employer, your title
3 and your company address?

4 OFFICER SHAW: I'm Leonard Anthony Shaw. I work for
5 the City of Wilmer Police Department. I've been there
6 approximately four years full-time.

7 MS. McMURTRY: Okay. Thank you. Member Higgins, the
8 witnesses on Panel 1 are qualified, and I will turn the
9 questioning over to Mr. Kaminski.

10 CHAIRWOMAN HIGGINS: Thank you. And I'd just ask all
11 the witnesses to be sure that you speak into the microphone,
12 that the microphones are on when the red button is up.

13 MR. KAMINSKI: Thank you. My name is Ronald
14 Kaminski. I was the Survival Factors Group Chairman on this
15 investigation. This Panel will begin with the two motorists
16 who stopped and helped evacuate passengers from the motorcoach.
17 They will describe their actions and conditions on the bus. In
18 addition, the first police officer on scene will describe the
19 circumstances when he arrived.

20 Mr. Saulsbury, can you begin with your description of
21 the events on September 23, 2005?

22 MR. SAULSBURY: We were on our way into work. We had
23 noticed a small grass fire heading northbound on 45 before we
24 seen the bus. As we approached the bus, we saw the bus pulled
25 off to the side, a small fire in the back, seen the people were

1 still seated on the bus. So we pulled over to see what we
2 could do as far as getting them off the bus.

3 As soon as we got out, we called 911, came up there,
4 entered the bus. There was a thin white smoke and as it
5 progressed, it was heavier and heavier smoke, black smoke.

6 MR. KAMINSKI: Can you tell us what you did? Did you
7 enter the bus?

8 MR. SAULSBURY: We entered the bus approximately I
9 believe three times trying to remove the passengers. We tried
10 two times on the bus and then after exiting the bus the second
11 time, tried breaking out windows, tried to prop open escape
12 windows. We were able to get one, one window open, very small
13 holes where it broke into the windows. All that was in an
14 effort to get smoke out of the bus so we could get back in.
15 And then on the third trip into the bus, the smoke was just too
16 much and then it was just overpowering so that shortly after an
17 explosion, we were not able to get back into the bus.

18 MR. KAMINSKI: Okay. When you first -- what was the
19 extent of the fire when you first saw it?

20 MR. SAULSBURY: From the angle I seen it, it looked
21 fairly small, just small flames coming up the --

22 MR. KAMINSKI: What angle was that?

23 MR. SAULSBURY: We were approaching, I guess it would
24 be coming from behind the bus, looking towards the entry side
25 of the bus.

1 MR. KAMINSKI: How many people do you estimate or do
2 you remember removing from the bus?

3 MR. SAULSBURY: I believe four personally.

4 MR. KAMINSKI: And how long do you think you were on
5 the bus before the conditions on the bus got to the point where
6 you couldn't go back there anymore, go on there?

7 MR. SAULSBURY: Within minutes.

8 MR. KAMINSKI: And at what point of the rescue,
9 during the rescue effort, did you hear or feel the explosions?

10 MR. SAULSBURY: It was towards the end. Too much
11 smoke on the bus. It was just -- it was probably seconds.

12 MR. KAMINSKI: And how many explosions or bursts of
13 fire do you recall hearing or feeling?

14 MR. SAULSBURY: I believe six, maybe seven.

15 MR. KAMINSKI: Okay. Mr. Wood, can you please begin
16 with your description of the events on September 23rd?

17 MR. WOOD: Like Jason said, we were driving into
18 work, and we seen that small little grass fire over in Ferris,
19 but -- and then we came a little bit further up the road and we
20 seen, you know, a small fire in the rear end of the bus. But
21 after we looked, the lights were on in the bus and everybody
22 was still sitting down. So that's why we pulled over to see
23 what was going on, if we could help them out. And when we
24 first got up to the bus, the nurses had one guy they were
25 trying to get out of the bus but he was pretty much too heavy

1 for, for them to get him off. So we told them to get out of
2 our way and we started pulling him off. And, you know, it was
3 just like as soon as one of us would go on the bus, another
4 person would run on there and try to help somebody off. But
5 then, you know, it didn't take long at all before it was
6 engulfed with, you know, dark, thick smoke that you couldn't,
7 you know, you can't even catch your breath. And then we tried
8 to bust out windows, tried to -- we got one window propped up I
9 guess on the driver's side and tried to crawl in there to grab
10 one lady but couldn't pull her out of the window. So we went
11 around to the front, and that's whenever it started blowing up.
12 We felt the explosions.

13 MR. KAMINSKI: Okay. What was the extent of the fire
14 when you first came upon the motorcoach?

15 MR. WOOD: It was just a small flame up the rear
16 side -- the rear passenger side. It wasn't really -- it didn't
17 look that big to me.

18 MR. KAMINSKI: And can you describe how the fire
19 progressed within the motorcoach?

20 MR. WOOD: Very fast. It was kind of, you know, you
21 could breathe when you first, you know, the first time or
22 maybe -- but by the third time we went on the bus, it was --
23 you were just choking as soon as you went on there.

24 MR. KAMINSKI: Can you give us a timeframe about
25 approximately how long that took before you couldn't get on

1 there anymore?

2 MR. WOOD: It seemed like, you know, just in a couple
3 of minutes. It didn't take long at all.

4 MR. KAMINSKI: Okay. Thank you. Officer Shaw, can
5 you please begin with your description of the events on
6 September 23rd?

7 OFFICER SHAW: I was in the process of going home
8 from work, leaving night shift that night, a call came in,
9 according to our clock about 6:08. I grabbed a set of keys,
10 jumped in a squad car. I went south on the northbound service
11 road because I knew the highway was going to be clogged and
12 couldn't come up from behind it. My partner had gone on down
13 south to start diverting traffic.

14 When I approached it, I parked in front of the bus,
15 basically on the passenger's side facing it. The flames were
16 just starting to reach the top of the bus on the outside. As I
17 approached the bus, a lot of the people that had already been
18 taken off were fairly close to the bus. So I had some of the
19 rescuers start moving them farther back.

20 I entered the bus the first time and helped pull off
21 one of the gentlemen, and the smoke at that point was probably
22 six or eight inches above the floor, and you could see to about
23 the second row of seats. When we went back on, probably 20, 30
24 seconds later, to get the second person off that I helped, the
25 smoke was already all the way down to the floor and like the

1 other gentleman said, you know, you could barely keep your head
2 in it. By the time I went back on the third or fourth time,
3 you couldn't see anything. The smoke was all the way to the
4 floor. We tried to break out some windows but, you know, we
5 could just get basically the bottom portion of the windows,
6 like he said, trying to get some of the smoke out of the bus.

7 MR. KAMINSKI: And how long was it before -- when you
8 first arrived at the scene until the time you got the call?

9 OFFICER SHAW: Possibly a minute, minute and a half
10 if that long.

11 MR. KAMINSKI: And again, when you first got there,
12 what was the extent of the fire when you first saw it?

13 OFFICER SHAW: From what I can remember, it was just
14 starting to reach the top of the bus on the outside.

15 MR. KAMINSKI: How far forward?

16 OFFICER SHAW: It was just right there at the rear
17 wheel area.

18 MR. KAMINSKI: And how did you remove the passengers?
19 Did you pick them up, carry them?

20 OFFICER SHAW: The first one, there was already -- I
21 don't remember who was on the bus at that point, I just kind of
22 reached around. They was helping I believe Mr. Wilson, I just
23 reached around and grabbed him by the belt and started pulling
24 him, and then whoever had him by the shoulders, you know,
25 helped him on out, you know, helped carry him out and down the

1 stairs. And then the second one, I was up on the floor of the
2 bus.

3 MR. KAMINSKI: Now when you approached the motorcoach
4 and got on, did you realize that there were oxygen canisters on
5 the motorcoach?

6 OFFICER SHAW: No, at that point all I knew was that
7 there was -- they said something about a lot of elderly people
8 on the bus. We didn't know if -- I didn't know what kind of
9 condition they were in at that point, and I didn't know
10 anything about the oxygen cylinders or anything else on the
11 bus.

12 MR. KAMINSKI: And at what point during the rescue
13 effort did you hear or feel the explosions?

14 OFFICER SHAW: It was probably three or four minutes
15 after I arrived, from what I can remember, maybe longer. I'd
16 have to watch the tape to see exactly on that.

17 MR. KAMINSKI: Could you describe the explosions for
18 us please?

19 OFFICER SHAW: I was standing on the, if I remember
20 correctly, on the bottom step of the bus. The first one was
21 just more of a concussion sound. At that point, the other
22 officers that had arrived on the scene, one of them was up on
23 the top landing of the bus trying to, trying to get in. And we
24 went in next to the bus, because I didn't know at that point,
25 if it was, you know, the rear tires were starting to explode or

1 if the fuel tank was ruptured, exactly what was exploding. And
2 then several -- I remember several other explosions coming
3 fairly soon after the first one.

4 MR. KAMINSKI: And then what did you do after the
5 explosions?

6 OFFICER SHAW: Basically trying at that point trying
7 to keep the people back from the fire. We were looking for the
8 fire departments, getting them close enough to start fighting
9 the fire. We knew it wasn't safe to go on board the bus
10 anymore because we weren't sure what else was going to explode.

11 MR. KAMINSKI: Member Higgins, that concludes our
12 questioning for these witnesses.

13 CHAIRWOMAN HIGGINS: Thank you. We will not take
14 questions from the parties for this Panel.

15 First of all, I want to thank all of you for what you
16 did that day. You saved lives, and that's very important. I
17 wanted to ask just a couple of questions and -- how difficult
18 was it to remove the passengers from the bus once you were able
19 to stop, Mr. Saulsbury, Mr. Wood?

20 MR. SAULSBURY: It was extremely difficult. Limited
21 space, one entry in, one entry out, and the fact that most of
22 the passengers needed assistance walking to begin with.

23 CHAIRWOMAN HIGGINS: Mr. Wood, would you care to add
24 to that?

25 MR. WOOD: Like he said, there was no room at all,

1 and most of the patients weren't -- I mean it was like carrying
2 dead weight. It's heavy, and trying to move it, it was very
3 difficult and plus with the factor of the smoke.

4 CHAIRWOMAN HIGGINS: Okay. Officer Shaw.

5 OFFICER SHAW: Like I said, with the conditions, you
6 know, some of them, like Mr. Wilson, you know, he was ill and
7 he was paralyzed, you know, you be as careful as you can with
8 them but like I said, there's no room, you couldn't see, you
9 know, so you weren't sure how you were grabbing them at first,
10 and as far as carrying them off and going down the steps and
11 stuff, you know, you don't have time to do all the procedures
12 you learned, you know, like in my situation, you just get them
13 off as best you can.

14 CHAIRWOMAN HIGGINS: Did you ever feel that you were
15 personally at risk going on and off the bus? Mr. Wood.

16 MR. WOOD: Oh, yeah. It just felt like something was
17 going to happen soon, you know, the smoke was so bad you were
18 choking, gagging. I was afraid I was going to pass out
19 whenever I was on the bus several times, and after the
20 explosion, it was like, I'm glad I wasn't on the bus when that
21 happened.

22 CHAIRWOMAN HIGGINS: How about you, Mr. Saulsbury?

23 MR. SAULSBURY: At the time I guess I didn't really
24 think about personal risk but, you know, yeah. It was pretty
25 intense.

1 CHAIRWOMAN HIGGINS: Do any of the Board members have
2 questions for this Panel?

3 (No response.)

4 CHAIRWOMAN HIGGINS: Okay. I want to thank you for
5 what you did that day and for coming here today. I know you
6 had to take time off from your jobs, and Mr. Wood has twins
7 that are what, 10 days old, brand new twins. So you've made a
8 personal sacrifice a year ago and risked your lives to help
9 other people and you also made a sacrifice today to come here.
10 And we are very appreciative of that, and again, on behalf of
11 the Board and the families who I know are watching, I want to
12 thank all of you for what you did to help try and save lives in
13 that accident. Thank you.

14 We will now dismiss this Panel and we will take a
15 short 10 minute break, and we will begin again at 9:25.

16 (Off the record.)

17 (On the record.)

18 MS. McMURTRY: Thank you, Member Higgins. As before,
19 we will swear the whole -- all of Panel 2 in at the same time.
20 So if you would raise your right hand.
21 (Whereupon,

22 LARRY PLACHNO, MATTHEW A. DAECHER, MARTY AHRENS,
23 ROBERT CRESCENZO, PHYLLIS PLANISEK, BONNIE BASS
24 were called as witnesses, and having been first duly sworn,
25 were examined and testified as follows:)

1 MS. McMURTRY: Mr. Plachno, would you please give
2 your full name and title and business address -- company and
3 business address please?

4 MR. PLACHNO: Warren Joseph Plachno, National Bus
5 Trader, Incorporated, magazine editor/publisher, 9698 West
6 Judson Road, Polo, Illinois. I've been with the company for 29
7 years.

8 MS. McMURTRY: And what are your duties and
9 responsibilities?

10 MR. PLACHNO: Editor and publisher.

11 MS. McMURTRY: Thank you. Mr. Daecher, could you
12 give us your full name, your current employer, your title and
13 your company address?

14 MR. DAECHER: Sure. Matthew Daecher, Vice President,
15 Daecher Consulting Group, 3780 Trindle Road, Camp Hill,
16 Pennsylvania.

17 MS. McMURTRY: And how long have you been in your
18 current position?

19 MR. DAECHER: Ten years.

20 MS. McMURTRY: And your duties and responsibilities?

21 MR. DAECHER: Our company is risk management
22 consultants to the passenger transportation industry.

23 MS. McMURTRY: Okay. Thank you. Ms. Ahrens, could
24 you state your full name, your current employer, your title and
25 your company address for the record?

1 MS. AHRENS: It's Martha Jill Ahrens, at the National
2 Fire Protection Association in Quincy, Massachusetts, and I am
3 the Manager of the Fire Analysis Services and I have been with
4 NFPA since 1997.

5 MS. McMURTRY: And your duties and responsibilities?

6 MS. AHRENS: Both to analyze fire data based on
7 information obtained from the fire department, fire
8 departments, and to manage or oversee some other NFP one stop
9 data shop analysts.

10 MS. McMURTRY: Okay. Thank you. Mr. Crescenzo --

11 MR. CRESCENZO: Crescenzo.

12 MS. McMURTRY: Crescenzo. Sorry. Could you state
13 your full name, your current employer, your title and your
14 company address?

15 MR. CRESCENZO: Yes. Robert Andrew Crescenzo. I'm
16 the Vice President for Safety at Lancer Insurance Company in
17 Long Beach, New York.

18 MS. McMURTRY: And how long have you been in your
19 current position?

20 MR. CRESCENZO: Seventeen years.

21 MS. McMURTRY: And your duties and responsibilities?

22 MR. CRESCENZO: I'm responsible for managing our
23 safety program for our Lancer Insurance policyholders.

24 MS. McMURTRY: Okay. Thank you. And Bonnie, could
25 you please state your full name, your current employer, your

1 title and your company address?

2 MS. BASS: Bonnie Danel Bass, U.S. Department of
3 Transportation. My title is Chief of Passenger Carrier Safety
4 Division. I've been with the Federal Government 28 years, 19
5 of which has been with FMCSA.

6 MS. McMURTRY: And is your mic on, Bonnie?

7 MS. BASS: It's on now.

8 MS. McMURTRY: Okay. Could you -- what are your
9 duties and responsibilities?

10 MS. BASS: I manage the Agency's Passenger Carrier
11 Safety Program.

12 MS. McMURTRY: Thank you. And, Ms. Planisek.

13 MS. PLANISEK: Phyllis Planisek from National
14 Interstate Insurance. I'm Claims Manager there. I've been
15 there for 12 years, and my responsibilities are to manage the
16 heavy physical damage claims handling.

17 MS. McMURTRY: Okay. And your business address?

18 MS. PLANISEK: 3250 Interstate Drive, Richfield,
19 Ohio.

20 MS. McMURTRY: Okay. Thank you very much. Member
21 Higgins, Panel 2 is sworn and qualified, and Paula can begin
22 the questioning.

23 CHAIRWOMAN HIGGINS: Let me just ask again, all of
24 you, when you are asked questions, please turn on your mic
25 because we can't hear you, and I also want to introduce our

1 Chairman, Mark Rosenker, who has joined us. He can't be with
2 us all day, but he is here now, and I just want to have you all
3 meet Mark, an expert. Paula.

4 MS. SIND-PRUNIER: All right. I'm Paula Sind-
5 Prunier. I was one of the NTSB investigators who was on scene
6 in Wilmer for the accident investigation, and with me today is
7 Mr. Larry Yohe, who was also involved in the on scene
8 investigation.

9 We'll begin this morning with questioning of the
10 first witness who will provide a historical on trends in
11 motorcoach design in order to provide a foundation for
12 understanding the mechanisms and characteristics of these
13 fires. We'll then proceed with questions for the remaining
14 witnesses related to the existence of data concerning
15 motorcoach fires, including their prevalence, characteristics,
16 consequences and causes.

17 During the course of this investigation into the bus
18 fire in Wilmer, Texas, Safety Board investigators soon
19 recognized that motorcoach fires were not as infrequent in
20 occurrence as one would hope. It was also quickly realized
21 that the reason perhaps that these types of fires had until
22 then escaped recognition by the Safety Board was because they
23 had at least until then involved no fatalities and relatively
24 few injuries.

25 The objective of this panel is to learn more about

1 the availability of sources of data for understanding and
2 tracking trends in motorcoach fires.

3 Mr. Yohe, if you'll begin with the questioning.

4 MR. YOHE: Mr. Plachno, we brought you here today as
5 a bus historian, and I wonder if you could just very briefly,
6 you know, tell us like what kind of experience you have, you
7 know, concerning buses, any publications? Just very briefly.

8 MR. PLACHNO: Good morning. Please let me excuse
9 myself. I'm just getting over a summer cold, and I hope you
10 can understand me.

11 The answer to your question is I because a
12 transportation historian at the age of 7 founded my first
13 transportation publication at the age of 17, purchased my first
14 bus in 1963. I've worked for various bus companies doing
15 virtually every job in a bus company from driver trainer to
16 driver, safety supervisor, dispatcher, director of scheduled
17 service. I was a shop superintendent for a fleet of more than
18 100 buses, transit director for two small municipalities and I
19 owned a small bus company in Wisconsin myself. I founded
20 National Bus Trader in 1977, and I'm currently the senior
21 editor in the bus industry. I've written two bus books, Modern
22 Intercity Coaches, which is a 320 page hardbound book, covering
23 motorcoaches in the United States and Canada from the early
24 1950s to the mid 1990s, and I also wrote the Beginner's Guide
25 to Coaches.

1 MR. YOHE: Thank you. I wonder if you could tell us
2 just in a -- very briefly or kind of the basic facts as you
3 have them, like what do you see as major changes in motorcoach
4 construction, let's say over the last 20 or 25 years?

5 MR. PLACHNO: Well, I was going to start out by
6 explaining that the motorcoaches we've talked about so far this
7 morning, MCI, Prevost, Von Hool, Setra, are all what we call
8 interval design which means there is no separate body and
9 chassis. That construction came into General Motors in the
10 United States in 1930s and eventually worked its way into
11 Europe by the 1950s. The advantage of that kind of
12 construction is that the better interval vehicles, if they're
13 properly maintained, will go 2 million miles or more. So they
14 are built for long hard service. The -- as far as changes over
15 the years, I'm not going to get into the details. It will take
16 forever to talk about changes in the length and the width and
17 the height and all of that.

18 The biggest change that might have some bearing on
19 fires, but I'm not sure, because I'm not an expert in that, is
20 that over the years we've gone more to plastics and composites
21 rather than metals in construction. But some of the composites
22 and the plastics are just as strong as the steel in some
23 places, and as far as overall weight is concerned, we certainly
24 have not declined in the weight of buses. Today's modern buses
25 are heavier than they have ever been.

1 Did you want me to mention evacuation doors, too?

2 Well, let me add one more thing very quickly. The
3 modern motorcoaches today are now coming in with devices for
4 monitoring tires, both tire temperature and pressure, and
5 devices for monitoring the possibility of fires and fire
6 suppression systems.

7 MR. YOHE: Let me ask you. Do you have any knowledge
8 as to whether there's a trend in the last 5 years or 10 years,
9 whether there's been an increase in bus fires?

10 MR. PLACHNO: Did you want me to go to the photos
11 first on the evacuation doors?

12 MR. YOHE: I think we could do that. I think we
13 could do that next.

14 MR. PLACHNO: Okay. Your question on the increase of
15 fires, one of the problems the bus industry has is that fires
16 are frequently not considered accidents, and as a result, we're
17 not keeping records maybe like we should. From my personal
18 observation, I saw mechanical problems increases after
19 deregulation came in in 1982, but in the last, let's say
20 several years, there has been an increase in fires that I know
21 of. I have talked to several different organizations in the
22 industry, who have had a concern about them. In fact, in front
23 of me before I left to come to this hearing, I was notified of
24 two bus fires just last week, one in Charleston, South Carolina
25 and one in Toronto, and somebody told me there was a third one

1 last week that I missed. There's absolutely no question that
2 the number of fires is increasing.

3 MR. YOHE: Okay. Do you have any -- just your -- is
4 it true that you have visited, you know, most of the major
5 manufacturing plants?

6 MR. PLACHNO: Both in the United States and Europe.

7 MR. YOHE: Okay. And do you see anything about coach
8 construction or engine compartments, anything that would lend
9 itself to buses today being more vulnerable to fires and
10 severity of fires than like I said, than say 25 years ago or
11 maybe not even that far back.

12 MR. PLACHNO: Can I take a minute to go through the
13 types of fires?

14 MR. YOHE: Go ahead.

15 MR. PLACHNO: My experience and the information that
16 I'm getting, there are -- there's more than one kind of bus
17 fire. From my standpoint, I see four predominant types of
18 fires happening in motorcoaches. I would classify them as
19 engine burn fires. I would classify that number two is wheel
20 fires of different types. Number three would be battery
21 compartment, electrical fires, and the fourth one would be
22 auxiliary heater fires.

23 Now I'm sure there are other reasons but those are
24 the ones that I typically see.

25 Now to go through them and give you some idea where I

1 stand on what causes them, if you take the engine compartment
2 by itself, the first thing that I would comment on are the
3 newer engines are running hotter than the older engines did
4 which may not be a big problem in a truck when that engine is
5 sitting out in front and you've got a radiator cooling it off.
6 But in a bus, you're taking that very same engine and you're
7 sticking it into a closed compartment in the back, and so that
8 extra heat becomes a possible fire hazard back there. The
9 reason for the extra heat, of course, is that it helps decrease
10 the pollution. So you've got one pulling against the other.

11 The other comment that I would make about engine
12 compartment fires is that the newer engines are all equipped
13 with turbos, and the turbo again is supposed to make the engine
14 run cleaner and give it more power, but a turbo can be a
15 disaster. If that turbo lets loose, it's like shrapnel flying
16 around in that engine compartment, and you've got a hot engine
17 and you've got fluids back there, and that doesn't help the
18 fire situation one bit.

19 There are engine compartment fires that start for
20 other reasons, just simply a hose breaks loose or something,
21 but that certainly is one of the major reasons for fires in an
22 engine compartment.

23 In this particular case, we're talking about the
24 situation in Texas, that's a wheel fire. Now when you're
25 dealing with wheel fires, the way I look at it is you can have

1 hub fires, you can have brake fires and you can have tire
2 fires. Tire fires are terrible because once a tire gets
3 started on fire, it's nearly impossible to put out. It's very
4 difficult, and then from there we move to battery compartments
5 and electrical fires and auxiliary heater fires.

6 Now my experience has been that even a good bus
7 operator with good maintenance will occasionally or could
8 possibly have problems with wheels, batteries and auxiliary
9 heaters. Things just happen, but as a general rule, I would
10 tend to believe the majority of those things are lack of
11 maintenance. Does that answer your question?

12 MR. YOHE: Yeah. That pretty much does answer that
13 part of it. I want to go back to your -- some of your
14 background, more of a historian. I understand that in, perhaps
15 back in the fifties or sixties, that we had buses with
16 emergency doors. At some point, that practice stopped and
17 there are no longer emergency doors as such. Could you tell
18 us, you know, what you know about that --

19 MR. PLACHNO: Sure.

20 MR. YOHE: -- when the practice stopped and why
21 and --

22 MR. PLACHNO: We do have a photo. If they want to
23 put it up here, we can talk about it. Yes. Okay.

24 What you see behind me here, this particular bus is a
25 General Motors model PD4104, built by General Motors in

1 Pontiac, Michigan, from 1953 to 1960. The reason why I brought
2 this particular photograph is that if you look towards the back
3 of the bus, you can probably just barely make out the outline
4 of an emergency door back there. To the best of my knowledge,
5 this was the last model where a significant number of these
6 buses were built with an emergency door back there, for the
7 obvious reason that it provided a second means of egress from
8 the bus in the event of some kind of an emergency.

9 Later models did not have this emergency door, and I
10 could probably give you several reasons, one of which is that
11 passengers tended to mess around with it. Another reason is
12 that later models, the passenger compartment moved up higher
13 off the ground and it became more difficult for somebody to
14 simply jump out of there. You'd almost have to put a slide in
15 there like on an airplane, and I think perhaps the third reason
16 was while this bus was in production, we went into the push out
17 window situation, and that probably -- people probably felt we
18 didn't need the emergency door anymore.

19 But I think the one comment I would make, although
20 the emergency door's in the logical place, being totally
21 opposite from the normal passenger door, which maybe is logical
22 from the one standpoint, but today dealing with wheel fires and
23 engine compartment fires, that door is not in the right place
24 for emergency egress.

25 Do you want me to continue on with what they do in

1 Europe? There's another slide.

2 MR. YOHE: Go ahead. We are going to have other
3 witnesses that may talk about that but just briefly talk about
4 what it is in Europe and --

5 MR. PLACHNO: Just briefly, if you put that second
6 photo up here, basically we're looking for -- talking about
7 other means of egress, you know, evacuation from a bus. What
8 you see back here, this is actually the first LIG imported to
9 the United States but it gives you a good idea of what a
10 typical European tour coach is configured like. You've got to
11 start out by realizing that in Europe, they have a really good
12 trans service. So they never developed what we would call like
13 a Greyhound or Trailways schedule service over there, and as a
14 result, their buses are more highly geared to tour operations
15 than we would be here.

16 This is, this is basically a standard European tour
17 configuration. In a lot of the European tour coaches, you have
18 three doors. The driver's got a separate door which would
19 probably not help much with passenger evacuation because you'd
20 have to squeeze behind the wheel to get out, but it at least
21 lets the driver get in and out without interfering with any
22 other traffic flow if you will. You've got your standard front
23 door, which we have here in the United States but most of the
24 European tour coaches have also a center door. You can't see
25 it from here, but if you were to walk in that center door and

1 turn immediately to your right towards the front of the coach,
2 you would probably see a restroom. That's where European tour
3 coaches have their restrooms, not up in the back right corner
4 like we do in the United States. The reason for this is, of
5 course, it helps the sightseeing. You don't want to have a
6 restroom blocking the windows upstairs. The disadvantage of
7 that center door is that it's a fairly narrow walkway coming
8 down which is why we no longer see these buses in the United
9 States.

10 I can think of at least four manufacturers of buses,
11 all of them European by the way, who did import this kind of
12 bus and sell it in the United States. In fact, Van Hool had
13 their model, I think it was T815 for many years was being
14 offered with this configuration. But the American bus
15 operators discontinued buying it, and my understanding is that
16 the big problem was the liability of that middle door.

17 MR. YOHE: Okay. Okay. Thank you very much. Just
18 one, one question. Do you see -- do you have any -- personally
19 have any opinions or ideas as to what could be done as far as
20 expanding emergency exits on our U.S. coaches?

21 MR. PLACHNO: Wow. Obviously from what we've looked
22 at with that rear door in 4104, I would have to suggest
23 strongly that if we're looking at trying to deal with wheel
24 fires or engine compartment fires that the emergency door
25 should not be in the rear. That wouldn't help you one bit. It

1 possibly would help to have a door on the opposite side of the
2 coach from the passenger door so you would have some way to get
3 in and out. But I think the way the buses are built today,
4 with the passenger compartment so high off the ground, you'd
5 almost have to put a slide in to get the people out.

6 MR. YOHE: Okay. That's all I have right now.

7 MS. SIND-PRUNIER: Mr. Plachno, you alluded to the
8 fact that existing data sources are less than optimal, and so
9 I'd like to ask you if you'd care to comment and whether you
10 can explain some of the shortcomings of the existing accidents
11 and safety databases with respect to bus fires and why those
12 data are not necessarily as useful as they could be for
13 assessing and monitoring the risks and causes of bus fires.

14 MR. PLACHNO: Well, what I do know is that in most
15 situations a fire is not considered an accident. Now there are
16 procedures in place in the business industry and other
17 industries for recording accidents and taking information and
18 compiling information and statistics. As a result of the fact
19 that a fire is not an accident, that information is not
20 compiled and is not put in the statistics. As far as I know,
21 the only people that have perhaps some of that information
22 would be the insurance companies because it certainly doesn't
23 show up in any of the accident reporting statistics.

24 MS. SIND-PRUNIER: Okay. Would any of the other
25 panelists care to comment on that particular question as to

1 some of the reasons perhaps for the inadequacies in existing
2 data sources? Marty Ahrens please.

3 MS. AHRENS: I've done some analysis of bus fires
4 based on the fire department reports collected by the U.S. Fire
5 Administration's National Incident Reporting System, and using
6 our own annual fire department experience survey to calibrate
7 that and to develop national estimates of specific fire
8 problems, including in this case, bus fires. And, the fire --
9 NFIRS or National Fire Incident Reporting System is a standard
10 system that fire departments around the country can use to
11 document all types of fires, not -- the codes are probably
12 more -- better designed for structure fires but it can give you
13 a general idea on vehicle fires. And from that we see that in
14 1999 to 2003, we averaged about 2200 bus or school bus fires
15 reported to U.S. Fire Departments every day or each year,
16 excuse me, with an average of about 6 a day. And these vary.

17 I should also comment that less than 1 percent of
18 these fires resulted from collisions or overturns. The vast
19 majority are some kind of mechanical, electrical, equipment
20 problem.

21 MS. SIND-PRUNIER: So in other words, they vary only
22 a very small percentage of these, less than 1 percent, would
23 actually be likely to be captured in accident statistics?

24 MS. AHRENS: Right.

25 MS. SIND-PRUNIER: Okay. Any other panelists have

1 some thoughts on that matter?

2 (No response.)

3 MS. SIND-PRUNIER: Okay. I'd like to then move into
4 a discussion of some of the sources of data that are available
5 and I'd like to start with Mr. Daecher. If you could please,
6 and I'll ask in turn each of you to comment on this, what
7 sources of data are available? And I think it will be very
8 interesting for the record to also have some information about
9 the completeness and reliability of those data, how they are
10 updated, and what caveats and limitations exist in their
11 utilization.

12 MR. DAECHER: I think that, to each some of Larry's
13 comments and other panelists, the available of data is pretty
14 limited. A lot of the bus fire incidents that occur aren't
15 captured via any type of reporting simply because if the state
16 agency's investigating a single vehicle fire, wouldn't consider
17 that an accident. So it wouldn't be reported through the
18 traditional accident means, and from what I know in terms of
19 the data that we have on bus fires, there's very infrequent
20 times when you have any injuries on a coach. So when you have
21 no injuries, that -- and no other vehicles involved, it really
22 diminishes whether or not that will be reported.

23 In terms of the reliability of the data that's out
24 there, I don't really have any insight except that I don't --
25 except that to try and figure out the cause of the actual

1 vehicle fires from the data. I'm not sure the data, if there's
2 any type of consistent process in terms of investigating some
3 of these incidents to figure out the exact costs.

4 MS. SIND-PRUNIER: Okay. Now I understand that you
5 have been involved in a recent initiative to capture some data
6 at least about a small set of bus fires. If you could talk
7 about that, and again in terms of the completeness through
8 liability and some of the limitations of that data.

9 MR. DAECHER: Sure. We work with several insurance
10 captives, which are groups of operators within the passenger
11 transportation industry which for lack of a better way to
12 explain it quickly, form -- group together to form their own
13 insurance companies.

14 As part of our involvement with one of those
15 insurance captives, which is named TRACS Insurance Limited, we
16 were asked to survey the members and develop some statistics
17 within the group on the occurrence of bus fires, certainly as a
18 result of some large losses incurred by members of the group,
19 and they wanted to find out how prevalent the issue was.

20 TRACS has 43 current members in it, many different
21 operators, types of operators within the passenger
22 transportation industry. Thirty-four of the forty-three
23 members operate motor coaches at least part of their
24 operations. In our surveys, we had 30 out of 34 of those
25 operators to operate motorcoaches as part of their operations

1 respond to our survey, and developed some pretty good
2 information. Our survey was pretty specific in terms of trying
3 to get real detailed information out of the members of the
4 group, and I guess from my perspective, the operators of the
5 group are what you would consider better than average in terms
6 of safety, management maintenance programs. These are large
7 established operators who have been around and generally have
8 pretty good risk management programs internally.

9 From the data received, we found some pretty
10 interesting stuff, and let me see if we can go to -- just go to
11 the data summary slides, if we can get those up, we can go over
12 what we found.

13 Again we had 30 out of 34 of the motorcoach operators
14 within TRACS reported data on fires, and we asked for both
15 fires and near fires. Near fires we actually -- the
16 definition, we defined it as extinguishing of smoking vehicle
17 components before flames actually started or fires that were
18 extinguished by a suppression system at their beginning or
19 prior to the beginning.

20 Out of the 30 respondents to the survey that, that
21 indicated -- 15 or 50 percent of them indicated that they've
22 had at least one fire or near fire incident within the past 10
23 years, which is the amount of data that we captured. You can
24 go to the next slide.

25 And this will just start to show you the data

1 summary. We feel pretty good about the relevance of this data,
2 and the integrity of it. Like I said, these operators are
3 large established operators, ones that when a fire happens,
4 want to find out exactly why it did happen and will take an
5 investigation to the level it needs to be taken to get a
6 determination of what caused that fire and origin of fire.

7 You can see from the data here that 47 percent of the
8 fires started in the engine area which I think is pretty common
9 within the industry. A majority of the fires that we know of
10 happen in the engine area, and you can see how those 46.7
11 percent, it's broken down into causes or if they didn't know,
12 causes unknown. Several causes obviously in the, in the engine
13 area are turbocharger related, accounts for, of course, 21.4
14 percent. All of these are actually the same frequency.
15 Alternator/battery cables in some older coaches were a causal
16 factor of fires. Auxiliary heaters as Larry mentioned are a
17 frequent cause. And then the rest of the causes were unknown.
18 Go to the next slide.

19 Beyond, and when you start to look outside of the
20 engine area, where, where the causes of other types of fires
21 and where they're occurring 16.7 percent, were incomplete brake
22 release or brake drag, resulting in overheating and then
23 catching the other components on fire. Ten percent wheel hub
24 bearing failures. Ten percent were electrical shorts outside
25 the engine areas in other areas of the coach. And go one more

1 slide.

2 6.7 percent on auxiliary heater exhaust, and this is
3 the exhaust that comes out of the exhaust for the auxiliary
4 heaters which comes out pretty hot. We had some instances
5 where buses were parked or stationary and there was some
6 flammable material outside of the exhaust area for these
7 components and as a result, they caught fire. Only 3.3 percent
8 from an actual run flat -- a flat tire, and then 3.3 percent
9 was an arson issue. You can go one more slide.

10 This is a -- and again, a pretty small sample, but we
11 saw very little correlation between manufacture or year model
12 cause. There was nothing that stood out in terms of the -- you
13 know, we could identify any trends with any particular
14 manufacturer, any particular year or model of the coaches. Out
15 of all of the 30 respondents, 15 incidents, only 1 injury and
16 that was the driver who got injured putting -- trying to put
17 the fire out. No fatalities involved, and total loss in 14 of
18 the 30 incidents.

19 MS. SIND-PRUNIER: All right. You mentioned that
20 this data set was probably a little bit more detailed than
21 perhaps others that may be available but it is a relatively
22 small set as well?

23 MR. DAECHER: Yeah, it's a small set. We've expanded
24 efforts to continue to grow but we don't have anything which
25 is -- which adds onto this, but we consider this data in this

1 group to be pretty reliable.

2 MS. SIND-PRUNIER: Okay. All right. If we could
3 move to Ms. Ahrens. And, again, I'm looking for information on
4 sources of data that you've worked with and if you can comment
5 along the lines I've mentioned.

6 MS. AHRENS: Okay. Again, I work with the National
7 Fire Incident Reporting System, which is USFA's database, U.S.
8 Fire Administration's database, and as I said, fire departments
9 around the country, when they respond to an incident, can use
10 this system to document their fires or other calls, and we
11 estimate that at the present time, more than half of the
12 nation's reported fires make it into that database.

13 Now there is a code mobile property, code 12, which
14 captures buses and school buses, and that is also said to
15 include trackless trolleys. We cannot break that down any
16 further.

17 In our analyses because -- excuse me. Because NFIRS
18 is not a complete census, and it is -- has different -- it is
19 loosely -- it is administered by the U.S. Fire Administration,
20 but the states actually set the reporting policies. Some
21 states have mandatory reporting of all incidents. Some
22 mandatory for all fires, and some have completely voluntary
23 reporting, although the USFA does now require participation in
24 NFIRS to be eligible for the Fire Act, Fire Act grants. So
25 there are some incentives to make increased participation.

1 We generally -- when we do our analyses, we compare
2 the results in the NFIRS, or National Fire Incident Reporting
3 System, to the projections made from our annual fire
4 departments survey, which is a survey of fire departments
5 around the country. We get a survey coming back from about 10
6 percent of the total number of fire departments. It's a
7 population based survey. So projections can be made.

8 We compare the projections of the numbers of fires,
9 deaths, injuries, and property damage to the totals in NFIRS
10 and develops scaling ratios that are applied to the NFIRS data.

11 Now this means, of course, that neither set is
12 complete. We can miss things or you can have the option or the
13 possibility of having a very serious incident getting into the
14 data, and with projections being multiplied further than it
15 actually -- multiplied up so fatalities from bus fires are
16 rare, but you would see in a year that had one, it's likely to
17 be multiplied so that when you look at the fatalities by year,
18 for example, it is likely to be off. We normally work with
19 annual averages because of that.

20 We generally allocate unknown or missing data
21 proportionally and that can -- we assume when we do that, that
22 the -- if the data -- unknown data were known, it would be
23 distributed the way the known data was.

24 Another issue that does come up is that the codes are
25 not as specific as say the codes you have in your databases.

1 For example, we know that with the allocation of unknown 69
2 percent of the bus fires, bus and school bus fires reported in
3 '99 to 2003, began in the vehicle engine area, running gear or
4 wheel area, and for the purposes of transportation, you would
5 like to separate those out, but we cannot do that with the kind
6 of data we have. We can see that 29 percent of the fires
7 originated with electrical wire or cable insulation, 27 percent
8 with flammable or combustible liquids or gas piping or filters
9 and 8 percent with tires. So it's a lot of detail but it's not
10 nowhere near the same as a full investigation by somebody
11 specializing in bus fires.

12 MS. SIND-PRUNIER: Thank you. Mr. Crescenzo.

13 MR. CRESCENZO: Yes.

14 MS. SIND-PRUNIER: Are there any sources of data that
15 Lancer is working with, and if you could, comment about the
16 availability of that data, the limitations, and some of the
17 features of it?

18 MR. CRESCENZO: Certainly. As an insurance company,
19 the data that we collect is primarily related to claims filed
20 by our policyholders. So we, on a regular basis, receive
21 claims for bus fires, and that would consist of a policyholder
22 calling in a claim after an incident, and the reason they're
23 calling in the claim is because there is physical damage
24 coverage on the vehicle. We would know about claims where --
25 we would know about fires where a policyholder is filing a

1 claim against some existing policy for physical damage. If
2 they have no physical damage, we wouldn't necessarily know
3 about it unless there was bodily injury as well. The vast
4 majority of our claims over the last eight or nine years have
5 not included any bodily injury, so that the vast majority of
6 our claims are for physical damage to repair the bus.

7 The number of claims that we see has increased and --
8 over the years, and when you're looking at insurance company
9 data in claims, you have to look at the number of claims in
10 relation to the number of vehicles insured to get a ratio of
11 some type, and then insurance companies regularly look at
12 claims information and data over a several year period of time.
13 It's hard to analyze the meaning of the data in insurance terms
14 within a year or so. So we look at it over a period of time.

15 The -- one of the major issues with bus fire claims
16 is that the, the vehicle itself is burned, usually pretty
17 severely, and the cause and origin is, while it's not hard to
18 pinpoint the area of the -- where the fire may have started or
19 where the heat was strongest, it's hard to sometimes identify
20 the reason for the final outcome because the evidence has been
21 burned. So that's a challenge.

22 Our goal is to settle the claim and to fulfill the
23 legal responsibilities we have to the policy holder.

24 MS. SIND-PRUNIER: Okay. So would it be safe to say
25 that the depth or the specificity of information you may have

1 on individual bus fires will document the existence but perhaps
2 not get to the cause?

3 MR. CRESCENZO: Well, we will get to a cause
4 certainly. That -- the cause -- the claim may be settled with
5 the policyholder. In the meantime, the cause issues may
6 relate -- may be related to other factors that we would
7 evaluate. Our data is updated regularly. We have a monthly
8 update in our system of our data, so we know where all our
9 claims -- types of claims that we have, where they happened,
10 when they happened. We, we regularly share our data with, with
11 other government agencies and NHTSA. We regularly provide our
12 global kind of information to that agency. We have provided it
13 to FMCSA as well on a regular basis really from a perspective
14 of a safety -- providing the information for knowledge and for
15 safety of the public, riding public.

16 So that's the way that we deal with it but you have
17 to understand that each -- there are many insurance companies
18 that insure coaches, school buses and other kinds of passenger
19 transportation vehicles, and in order to get a national picture
20 of this, I believe you would have to really gather all of that
21 information and then perhaps link it to some of the other
22 databases available. Ours only reflects the claims of our
23 current policyholders and previous years past policyholders,
24 who have filed a claim with us. And so while we are the
25 largest insurer of buses in the country, we probably insure

1 about 20 to 25 percent of the buses, Lancer Insurance Company's
2 data may be -- you may be able to extrapolate trends, but it
3 may not be reflective of all of the buses in the country.

4 MS. SIND-PRUNIER: Okay. And one final question.
5 You mentioned that you do share data at times with NHTSA and
6 FMCSA.

7 MR. CRESCENZO: Yes.

8 MS. SIND-PRUNIER: My question there would be is that
9 strictly voluntarily or is there a regulatory mandate that you
10 do so?

11 MR. CRESCENZO: No, it's strictly voluntary.

12 MS. SIND-PRUNIER: Okay. Thank you.

13 MR. CRESCENZO: It's our interest in pushing out some
14 of the information.

15 MS. SIND-PRUNIER: Okay. Thank you. Just for
16 purposes of continuity, if we could, just voluntarily go to
17 Phyllis Planisek first, just to -- I'd like to, in the interest
18 of keeping things moving, you also are from an insurance
19 company, and so if you could answer the same question and in
20 particular highlight any differences and similarities with what
21 Mr. Crescenzo said so that we can perhaps get an understanding
22 of what it is industry-wide and what may be specific to an
23 individual insurance?

24 MS. PLANISEK: Well, our experience is very similar
25 to that of Lancer, whereas we only get the claims reported to

1 us when our insured wants to be compensated for their damage.
2 They need to have -- they call us if they have physical damage
3 coverage. If they don't have it, then obviously they take care
4 of the damage themselves. So our, our -- the near fires and
5 the fires that might be under their deductible, obviously small
6 damage fires, would not be reported to us.

7 Our database consists of the claims that are reported
8 to us, and our investigation is dependent upon the type of bus,
9 the age of the bus, the amount of damage, and that sort of
10 thing. The origin is usually pretty easy to determine but in
11 order to get to the cause, you need to hire a cause and origin
12 investigator, and in, in -- even in those cases where we do
13 hire one, cause cannot always be determined because of the
14 extent of the fire.

15 We have records that -- in our system, we updated our
16 system in 2003 so we could obtain better records, but in the,
17 in the past three years, we've had about 74 bus fires including
18 school bus, transit bus and motorcoaches, charter buses. And
19 of those 17 percent, we were unable to determine the exact
20 cause.

21 The reason that we do it, the reason for our
22 investigation, is mostly for determining subrogation, and
23 that's our motivating factors in most of the investigation. We
24 have had no experience with any kind of fatalities, and we've
25 had very little involving injury. The few injuries that we

1 have had, have been people making claims for emotional distress
2 because of having gone through the incident, no physical
3 injuries of any kind though.

4 MS. SIND-PRUNIER: Okay. All right. Thank you.
5 And, Ms. Bass?

6 MS. BASS: FMCSA receives bus fire data primarily
7 from two sources. The first source is the industry. We have
8 reached out to the industry on numerous occasions requesting
9 any data they may have on their bus fire experiences. We also
10 gather data from the states through our truck and bus accident
11 reporting system.

12 In addition to that, we have very recently
13 established a partnership with our sister agency, National
14 Highway Traffic Safety Administration, to develop a coordinated
15 data sharing program. Under this program, our two agencies
16 work together to more quickly identify, analyze and determine
17 the cause of bus fires. We are currently planning or actually
18 we have a few actual accidents or bus fires that we have
19 analyzed under this partnership. What happens is when FMCSA is
20 notified of a bus fire, we collaborate with NHTSA to determine
21 whether or not this is a fire that we would like additional
22 data on, and at that point, our folks in our eastern service
23 center will go out and contact the agency, the law enforcement
24 agency or the entity that investigated the fire and request
25 more detailed data about the nature of the cause, the make, the

1 model, the year, and have them then upload that data to us,
2 where NHTSA can then evaluate the data in more detail, to help
3 us learn more about the cause and the nature of these fires.

4 MS. SIND-PRUNIER: Okay. Thank you.

5 MR. YOHE: Yes, I have a question for Mr. Crescenzo.
6 We talked about bus fires. Like what, what types of buses --
7 are we talking about all sizes of buses like 16 passenger and
8 above, 15 passenger vans or just mainly motorcoaches? What
9 types of buses are we talking about as far as what you insure?

10 MR. CRESCENZO: Okay. Our bus fire data generally
11 includes larger vehicles. We're not including vans. We have a
12 passenger transportation division of our insurance company,
13 which covers a variety of passenger transportation -- forms of
14 passenger transportation vehicle. When we talk about a bus
15 fire, we're able to identify a make and a model of the bus
16 fire. So when I'm speaking about bus fires, I'm generally
17 speaking about coach or larger passenger vehicles, not 15
18 passenger vehicles.

19 MR. YOHE: Okay. Just one final question. You did
20 say that data has shown that there is some type of increase in
21 recent years. Is that correct? Or --

22 MR. CRESCENZO: Well, we -- I can tell you that we
23 have seen an increase per year with the highest year of
24 reported fires to our claims -- through our claims systems
25 being 2001, a decrease in 2002 from 2001, and then a regular

1 increase through 2005.

2 Now that has to be measured against the number of
3 vehicles we're insuring and that's very important. The figures
4 that we use in our actuarial staff, the actuarial staff of an
5 insurance company analyzes this data from a variety of
6 perspectives. We look at frequency, frequency as in number,
7 defined as the number times a particular claim occurs or
8 happens, and then we look at severities. Severity is defined
9 as the cost of those claims, and our bus fire frequency is
10 about .05 percent. So half a percent is the frequency which is
11 relatively low in comparison say to rear end accidents which is
12 about 18 percent.

13 The severity cost of those claims is 5 percent, so
14 that the severity is relatively high, the cost of that claim is
15 relatively high to the frequency. And so -- our measurement
16 can only be related to the number of vehicles we're insuring in
17 a particular year for comparing year to year, and each
18 insurance company would have to do that separately I believe.

19 MR. YOHE: And can you just tell me, is your
20 insurance company, beyond paying out the claim, do you do any
21 kind of technical studies to say, you know, what's causing
22 these fires? I mean do you get involved beyond just paying out
23 the claim?

24 MR. CRESCENZO: Well, yeah. We certainly use as
25 national industry does, we use a cause of origin expert in an

1 attempt to, primarily for subrogation, to attempt to find the
2 cause of the fire. That process can take a very long period of
3 time, versus the settling of the claim because a policy
4 requirement is to, if they have physical damage is to either
5 repair the bus or provide -- pay out the amount, the value of
6 the vehicle, so that they can move on and purchase another
7 vehicle or repair the vehicle. So there are two different
8 reasons for that as I think it was explained by National --

9 MR. YOHE: Thank you.

10 MR. CRESCENZO: You're welcome.

11 MR. YOHE: Now, Ms. Planisek, could you -- the same
12 question that I, that I just asked Mr. Crescenzo. Would you --
13 could you respond to that, too, as far as what your basically
14 -- has your company, other than just paying the claims, do
15 they do anything else to help study fires and maybe help come
16 up with solutions?

17 MS. PLANISEK: Well, not specifically. We do provide
18 any -- the claims department --

19 MR. YOHE: Could you speak up just a little bit
20 maybe.

21 MS. PLANISEK: I'm sorry.

22 MR. YOHE: Get a little closer to the microphone.

23 MS. PLANISEK: The claims department provides
24 feedback if we see a trend to our loss control department, and
25 if they need -- if they spot a trend with a particular insured,

1 they may go visit the insured and talk to them about bus
2 maintenance or whatever the cause may have been. But we don't
3 do anything beyond that.

4 MR. YOHE: Thank you.

5 MS. SIND-PRUNIER: Thank you. Madam Chairman?

6 CHAIRWOMAN HIGGINS: Thank you. We will now take
7 questions from the parties and why don't we start with the
8 Federal Motor Carrier Safety Administration.

9 MS. McMURRAY: Thank you, Madam Chairman. First the
10 U.S. Department of Transportation offers its deepest sympathy
11 to the families and friends of the victims of this tragic
12 incident.

13 I do have two questions for the panel. First,
14 Mr. Daecher, I believe you stated that 50 percent of the
15 respondents in your survey, around 15 companies, reported at
16 least 1 bus fire incident in the last 10 years. Could you
17 describe what the total number of those incidents were or an
18 average number that each respondent submitted or reported?

19 MR. DAECHER: Well, there's 15 of the 30 operators,
20 motorcoach operations reported at least 1, for a total of 30
21 incidents. So you had 15 companies that didn't have any and
22 some that had 1, and you had some that had more than 1. So if
23 you were to average it out, I mean two out of the responding,
24 and if you had 15 companies responding with two fires, it would
25 give you 30 incidents, not necessarily the way it broke out.

1 There were just some -- there's several that reported one, and
2 there might have been one with three. I don't have the data in
3 front of me to answer that question completely for you, but
4 there was varying degrees of frequency within each operation
5 that reported that they had occurred.

6 MS. McMURRAY: Thank you very much. Ms. Ahrens, I
7 think you also mentioned that fires from all sources, including
8 those from motor vehicles are collected by various fire
9 departments throughout the country. Could you explain in more
10 detail how this fire department data is collected, how it's
11 reported, and how it's recorded?

12 MS. AHRENS: Local fire departments use -- in most
13 cases use the standard National Fire Incident Reporting System
14 codes on -- or system. They may use the federally provided
15 software or they may use vendor software. Their incident
16 reports are -- if they're using the federal tool, they may
17 enter it directly into the server at the U.S. Fire
18 Administration, which the state NFIRS program manager would,
19 after doing some quality control work, would at some point
20 release that into the national database. Other departments
21 will submit a CD or a file to a state NFIRS program manager,
22 and the state compiles the data and at some point will send it
23 via some means, these days, some kind of an electronic means,
24 up to the U.S. Fire Administration. The U.S. Fire
25 Administration will do some additional quality control, and

1 then make it publicly available. So it's a three tiered system
2 and the local departments can analyze their data, use that same
3 system to analyze the data. The states can use it to analyze
4 their data, and then it can be used by USFA, by the NFPA and
5 other agencies or other organizations to analyze the national
6 fire problem.

7 CHAIRWOMAN HIGGINS: Okay. Thank you. National
8 Highway Traffic Safety Administration.

9 MR. MEDFORD: Thank you very much. I want to
10 continue on the NFIRS data for a second if I could. It's my
11 understanding that these are national estimates based on
12 surveys of the fire departments, and are they the most sort of
13 complete data set that exists in the country today on fires
14 involving motorcoaches or anything else?

15 MS. AHRENS: NFIRS I believe is the most complete and
16 detailed incident database. Again, we combine that with the
17 summary survey that the NFPA, the National Fire Protection
18 Association, does because NFIRS is not a complete census to
19 develop projections. I don't know whether -- well, let me back
20 up.

21 NFIRS is based generally on the incident officer's
22 data, their impression of the scene, and what they saw at the
23 fire. In practice, if it is referred for investigation, there
24 are many times that the NFIRS report is not updated after a
25 final cause is determined and so it may still come in with an

1 unknown cause. But it is a very detailed database with a vast
2 number of data elements, but it was designed to provide
3 information about the U.S. fire problem of all types, probably
4 with a greater emphasis on structures, but it can be used and
5 has been used for vehicles and I've analyzed vehicle fires of
6 various types using the NFIRS database with the NFPA survey.

7 MR. MEDFORD: Thank you. We heard the insurance
8 companies talk about increases in the trends or the number of
9 fires. I want to get to the question about whether the number
10 of coaches in use has increased or not, but before that, have
11 you seen in your survey data the same increases in fire
12 incidents with motorcoaches as has been reported here?

13 MS. AHRENS: Well, our survey data is not detailed
14 enough to give us the estimate on the motorcoaches. That comes
15 from the NFIRS data, but we would -- in terms of that level of
16 detail, we would get general information in our survey just
17 about the number of highway type vehicles and other type
18 vehicles and combine that with the NFIRS detail to develop the
19 projections. We found that from 2002 to 2003, the reported bus
20 fires rose 4 percent but the overall trend in recent years has
21 been relatively flat. We saw a peak in 1980, in 1981, and it's
22 just been -- since say 1990, it's been fluctuating between
23 almost 2000 and almost 2600 bus fires per year.

24 MR. MEDFORD: And, Mr. Plachno, I'd like to know
25 whether, since you're the historian, whether you believe or

1 whether you know the number of motor coaches in use today is
2 greater than it's been in the last, oh, say 20 years or do we
3 see an increase number on the roads today?

4 MR. PLACHNO: My personal opinion was the numbers
5 probably haven't changed much. From '91 through '98, we had a
6 continuous increase in sales from year to year. '98 was an all
7 time record high that I'm aware of. I think there were over
8 3,000 units that year. We then had the recession and 9/11 they
9 dropped down, specifically both new motorcoach sales in the
10 United States and Canada began increasing again in the fourth
11 quarter of 2004, and have increased seven quarters from then
12 until now. There were two quarters in 2005 that showed more
13 than a 40 percent increase over the 40 year. We just got
14 finished with the numbers for the second quarter of 2006, and
15 have showed an 11.8 percent increase over last year.

16 So we're currently going into a situation that more
17 new coaches are being sold than they have been but the numbers,
18 of course, are down from the late nineties.

19 MR. MEDFORD: Thank you. And the insurance company
20 representative has indicated that you, too, have seen increases
21 in the fires, and it wasn't clear to me whether you had
22 normalized -- I know you had indicated that you can make a
23 comparison between the number of insureds that you have for
24 motorcoaches versus the number of fires that you have claims
25 for. Have you normalized that data to look whether the risk

1 has actually increased or whether the fires have increased in
2 some proportional manner or not?

3 MR. CRESCENZO: I don't believe we have the -- a
4 specific answer to that or at least of Lancer insureds. We
5 certainly -- I agree with the findings of -- Matt Daecher's
6 findings on the reasons of the fires, and certainly I agree
7 with Larry in relation to the, the heat in the engine. We've
8 seen an increase in relation to the turbochargers, the fuel
9 lines, changes in the way fuel lines are run, the way they're
10 clipped into the engine. Once, once a vehicle is -- has
11 maintenance done to it, by a particular company, all of that
12 becomes a vast question as to what, what was done to the
13 vehicle and in what way and in what manner. So it's kind of
14 difficult to analyze whether there are increases.

15 We certainly know that model of years, in years of
16 models, we have seen some trends in 1998 to 2000. We've seen
17 an increase of model years, and that seemed to be related to,
18 to heater fires. That issue seemed to be resolved.

19 We've seen an increase in fire in model years 2002 to
20 2004 which are newer vehicles, and we believe those are
21 turbocharger related, an alternator or alternator sources. We
22 are not sure what that means yet.

23 MR. MEDFORD: Thank you very much. And then another
24 question in terms of engine fires. About half of those that
25 we've heard reported are engine fires. Are those fires

1 generally spread into the interior compartment of the vehicle
2 or do they -- or are they generally extinguished before they
3 propagate to that point or do you know?

4 MR. CRESCENZO: In our experience, they almost
5 always -- if the fire is reported to us, the, the -- most of
6 the fire claims reported to us are fairly serious in damage to
7 the vehicle and costs. Our average bus fire claim, this is an
8 average, so this is -- is close to \$80,000 per claim, on the
9 value of a coach that might be anywhere from \$250,000 to newer
10 models to \$400,000.

11 MS. PLANISEK: Right. I would agree with that. Most
12 of the claims that we see, the fire is a total loss.

13 MR. MEDFORD: So therefore they've all had probably
14 fire department attended fires, they fall within the scope of
15 the NFIRS data collection program probably.

16 MS. PLANISEK: I would guess.

17 MR. CRESCENZO: I would imagine, yes.

18 MR. MEDFORD: Then I just have one final question for
19 Mr. Plachno. I wanted to ask you about your comment with
20 respect to the second emergency egress door, and you said that
21 you thought that the reason that operators or companies had
22 stopped purchasing those vehicles was because of the liability.
23 Could you explain what liability you're referring to?

24 MR. PLACHNO: The -- both the rear door, rear
25 emergency door of the PD4104 as well as the center passenger

1 door in the European type vehicles, the emergency door in the
2 4104 could be easily opened by somebody while you're going down
3 the highway, and that's not a good thing to happen, but if you
4 put a lock on it controlled by the driver, then it's
5 unavailable if anything should happen and it's locked. So
6 you're kind of in a catch 22 situation with an emergency door.

7 With the door -- the center door on European coaches,
8 it's a slightly different situation. Bear in mind, that most
9 of the European coaches are used for tour service, in which
10 case you have both a driver and a tour escort. So you have one
11 individual, if you will, guard the front door and help the
12 passengers, and the second one to guard the center door and
13 help the passengers, whereas a lot of American bus operators
14 are running with a one man crew for either a scheduled service
15 or charters in which case one of those doors then gets, if you
16 will, unguarded and passengers are -- and if you're not
17 careful, somebody could stumble down the stairs and it becomes
18 a liability problem.

19 MR. MEDFORD: Well, thank you very much. Thank you,
20 Chairman.

21 CHAIRWOMAN HIGGINS: Thank you. Sunrise Senior
22 Living.

23 MR. SCHLOTT: Thank you. We have no questions for
24 the Panel.

25 CHAIRWOMAN HIGGINS: Texas Department of Public

1 Safety?

2 CAPTAIN PALMER: Thank you. We have no questions.

3 CHAIRWOMAN HIGGINS: Arvin Meritor?

4 MR. JOHNSTON: Thank you. We have no questions.

5 CHAIRWOMAN HIGGINS: Bridgestone?

6 MR. QUEISER: Thank you. I have just one question
7 maybe for Mr. Plachno. I got a sense that bus quantity
8 production was up until around September 11th, and then it's
9 been down or flat, maybe building ever since. How about
10 quantity of miles traveled by motorcoaches?

11 MR. PLACHNO: I have absolutely no records of miles
12 traveled. The manufacturers since 1985 have trusted me with
13 their production and sales figures, and I keep track of that
14 for the industry, but I have no knowledge of mileage.

15 MR. QUEISER: Okay. Thank you.

16 CHAIRWOMAN HIGGINS: MCI?

17 MR. MURPHY: Thank you. No, we have no questions.

18 CHAIRWOMAN HIGGINS: American Bus Association?

19 MR. LITTLER: Thank you. We have no questions at
20 this time.

21 CHAIRWOMAN HIGGINS: United Motorcoach Association?

22 MR. PRESLEY: My question is directed to Bob
23 Crescenzo. Bob, is there -- has Lancer Insurance Company
24 developed any data that would be a predictor of potential or
25 operators that may have potential fires?

1 MR. CRESCENZO: No, we haven't developed data. We do
2 use our loss control program to evaluate companies from a
3 perspective of companies that perform and we evaluate companies
4 based on how they perform their maintenance, how they train
5 their drivers, et cetera, et cetera. So that information is
6 provided to the underwriter in addition to the policyholder's
7 claim history and information, and then the underwriter makes
8 an underwriting decision based on that information. We have --
9 that's in a large sense.

10 In a more specific sense, we did about two years ago
11 have a program with a major fire extinguisher manufacturer
12 where we were recommending to our policyholders that they
13 consider putting 20 pound ABC fire extinguishers on their
14 vehicles. Some manufacturers provide that already and some
15 don't, and older vehicles don't have that size fire
16 extinguisher, in an attempt to perhaps mitigate a fire if at
17 all possible, and we also encourage our policyholders, through
18 our safety program, to regularly train their drivers in terms
19 of evacuation and also for their passengers and their customers
20 to understand the need for evacuation. So those are some of
21 the safety programs we've, we've instituted.

22 Not all of them are based on pure data. They're also
23 based on the safety issues and our concerns for the riding
24 public.

25 CHAIRWOMAN HIGGINS: Any other questions from the

1 Parties?

2 (No response.)

3 CHAIRWOMAN HIGGINS: All right. I'll now ask -- turn
4 to my colleagues on the Board of Inquiry, starting with
5 Mr. Chipkevich.

6 MR. CHIPKEVICH: No questions.

7 CHAIRWOMAN HIGGINS: Dr. Ellingstad?

8 DR. ELLINGSTAD: Thank you. I'd just like to ask a
9 couple of questions to try to clarify the size of the
10 population that we're dealing with, and I understand that each
11 of you is coming at that from a little bit different
12 perspective. With respect first of all to the insurance folks,
13 Mr. Crescenzo, you I think indicated you had around 25 percent
14 of the business. Is that correct?

15 MR. CRESCENZO: Yes, probably between 20 and 25
16 percent.

17 DR. ELLINGSTAD: Can you translate that into how many
18 operators, how many coaches, would be the denominator of your,
19 of your statistics?

20 MR. CRESCENZO: Yes. This is an estimate of
21 approximately 1200 operators, probably representing anywhere
22 between 20 and 25,000 vehicles. Now in -- when you're talking
23 about an operator, that may include a variety of different
24 sizes of vehicles and uses of vehicles, but those are the
25 numbers that we use in our passenger transportation area.

1 DR. ELLINGSTAD: Do you have a sense of what
2 proportion of those operators would be essentially the large
3 motorcoach operators or in how many large motorcoaches as
4 opposed --

5 MR. CRESCENZO: Between the motorcoach. I would say
6 of those 1200 customers in the passenger transportation area,
7 the vast majority, if not all of them, would have some -- at
8 least a coach or some coaches.

9 DR. ELLINGSTAD: Okay. Ms. Planisek, what, what is
10 your company -- what are the numbers?

11 MS. PLANISEK: Being in the claims department, I
12 don't really have that kind of information.

13 DR. ELLINGSTAD: Ms. Ahrens, you indicated that you
14 have perhaps the largest data set of, of bus fires available,
15 and obviously a small number of them are, are accident involved
16 kinds of things, and it's a different kind of a reporting
17 system. You also indicated that your classification scheme for
18 bus fires is somewhat different. Is this -- does this go down
19 to the level of coding in your database? Is it possible to
20 make use of that database if one were to go after individual
21 records to reclassify that or has that data escaped?

22 MS. AHRENS: I'm not sure that I fully understand the
23 question but I think what you're asking me is if, for example,
24 the code that captures engine and wheel area together.

25 DR. ELLINGSTAD: Uh-huh.

1 MS. AHRENS: Is that what you're asking? Could they
2 be subdivided?

3 DR. ELLINGSTAD: Yes. You indicated in your database
4 at the queries that you run uses engine compartment in a
5 different way than the other systems that we've seen.

6 MS. AHRENS: Right.

7 DR. ELLINGSTAD: Is that, is that how the data are
8 coded at their lowest level? Is it possible to go into any
9 subset of your, of your database and, and re-code it a
10 different way?

11 MS. AHRENS: At the level we receive it, it is a date
12 coded data set, and we do not receive the -- the narratives are
13 generally not released with the national data file. In some
14 cases, they may be -- the narrative data may be received at the
15 local state or even at the federal level, although one of the
16 joys of the computer age is that in some cases, the -- I know
17 of at least one software company that will generate a narrative
18 based on the coded data --

19 DR. ELLINGSTAD: Uh-huh.

20 MS. AHRENS: -- and then they are encouraged to add
21 additional information. And what we have seen because we also
22 have a separate database at the NFPA, that is an anecdotal,
23 that tries to capture additional information, and if there is
24 no question specifically asked about something, the odds of
25 getting additional -- that additional information are a lot

1 lower. Does that sort of answer your question?

2 DR. ELLINGSTAD: Yes. Thank you. Thank you. You
3 know, it's not necessarily encouraging that these data wind up
4 being categorized in a way that the detail can't be recovered.

5 MS. BASS, with respect to -- you've talked about a
6 data sharing program between FMCSA and NHTSA, could you
7 elaborate on that just a little bit?

8 MS. BASS: Yes, I'd be happy to. FMCSA in
9 recognition of the importance of trying to find out more about
10 the cause and the nature of bus fires, approached NHTSA about
11 joining us in a partnership, if you will, to both gather,
12 analyze and investigate or explore the causes of bus fires
13 within the industry. And basically the way this works is
14 through FMCSA's contacts with members of the industry, with our
15 state law enforcement agencies in the states, we oftentimes
16 become very -- we become aware of the incidents of bus fires
17 perhaps more readily than others may be.

18 DR. ELLINGSTAD: Uh-huh.

19 MS. BASS: And once we're notified of a bus fire, we
20 will contact our counterparts in NHTSA, and we will review the
21 nature of the fire and jointly determine whether or not more
22 investigation needs to be done regarding this particular fire.
23 By more investigation I mean our folks in FMCSA, our field
24 folks, will contact the division administrator in the state in
25 which the fire occurred, and they will contact the state and/or

1 local responders. First responders to that fire, are the
2 entities that are responsible for investigating the incident.
3 We will get more detailed information by requesting a copy of
4 the actual police accident report, the incident report.

5 DR. ELLINGSTAD: Is this restricted to reported
6 accidents? Are you able to be sensitive to bus fires that,
7 that would not wind up in, in an accident database per se?

8 MS. BASS: You're correct when you say that typically
9 states consider -- many states consider bus fires to be
10 incidents, not accidents, and so will not upload that
11 information to us on our accident reporting system. However,
12 because of our contacts in the field, because of our close
13 working relationships with the law enforcement, both with the
14 state and the local areas, we have established close working
15 relationships with those entities and on some occasions are
16 able to get those agencies to actually provide us with more
17 detailed information about the fire itself. And we're able to
18 get information such as the make, the model, the year, a
19 description of the incident perhaps the general locality, where
20 that fire occurred.

21 DR. ELLINGSTAD: Thank you very much.

22 MS. BASS: Surely.

23 CHAIRWOMAN HIGGINS: Thank you. Mr. Magladry.

24 MR. MAGLADRY: Good morning. Ms. Ahrens, you were
25 talking about the NFIRS database earlier.

1 MS. AHRENS: Yes.

2 MR. MAGLADRY: And I just wanted to clarify a point.

3 It's my understanding that that's a voluntary system or pretty
4 much a voluntary system.

5 MS. AHRENS: At the federal level, it is voluntary
6 but different -- many states have some mandatory reporting
7 standards ranging from all incidents, all fires, all fires with
8 some kind of dollar loss or injury threshold, to completely
9 voluntary.

10 MR. MAGLADRY: Once you get that -- once that
11 information makes itself to the federal level, are we -- did
12 you -- did I hear you say that we have about 50 percent of
13 those fires reported?

14 MS. AHRENS: I believe that we're running slightly
15 more than half of the fires that are reported to the local fire
16 departments make it into NFIRS these days.

17 MR. MAGLADRY: Okay. Mr. Daecher, you gave some data
18 in your, your limited survey here with respect to causation of
19 fires, relatively small sample, relatively small percentages,
20 and I was wondering from any of the panel members, whether
21 you're aware of that data -- that kind of data being recovered
22 in any other way except, for example, the small survey that
23 Mr. Daecher's done as to engine fire, wheel fire, auxiliary
24 heater fire, those kinds of things?

25 MR. DAECHER: I don't think there's any other sources

1 that capture in that manner available today, but I think that
2 that data is probably representative of what's happening in the
3 industry if you, if you look at it as a whole. So I think
4 it's -- I would assume to be fair to say that in our data, 85
5 percent or greater than 85 percent of the fires originate
6 either in the engine compartment or in a wheel well, and I
7 would go out on a limb and say that that's pretty
8 representative of what I know within the industry to be
9 occurring and where they're happening.

10 So I don't think while we have specific data to
11 support it, my gut feeling is that it's pretty representative
12 of what's happening. Maybe some other people can comment.

13 MR. MAGLADRY: Mr. Plachno, would you like to
14 comment?

15 MR. PLACHNO: I don't have actual numbers but based
16 on the material that I get through my networking friends, I
17 would have to agree that sounds pretty close to what's the
18 reality out there.

19 MR. MAGLADRY: Thank you. Mr. Crescenzo, you had
20 talked about the possibility of doing more in depth
21 investigation into a particular fire from time to time. What
22 would trigger you to do -- what would trigger your insurance
23 company to do that?

24 MR. CRESCENZO: We would do that in order to
25 determine cause and origin. Our goal would be to, to determine

1 from the subrogation point of view, where subrogation is the
2 process by which the insurance company would go outside to
3 another source and say we believe the fire might be related to
4 a problem with a product within the manufacturer of the bus or
5 the bus manufacturer. So we would take that approach. We
6 certainly have not had any situations or similar to National
7 Interstate, we have rarely, if ever, had any physical injuries,
8 and we consider that to be quite lucky. So we've generally
9 been focusing on the vehicle itself and the cause of the fire.
10 So the investigation might be related to that.

11 It might be related to the cost of the, the cost of
12 the fire itself, the cost of investigating the cost of settling
13 the claim, the cost of damage to property around the fire. We
14 have had some instances where there have been multiple vehicle
15 fires, so vehicles parked very close to one another, one
16 catches fire and the fire spreads. So that would be something
17 we would want to look into very carefully. Certainly arson is
18 another reason that we would look into to see if there's a
19 criminal act of some type related to that.

20 So those are some of the reasons that we would
21 investigate a claim or specifically -- it would be rare that we
22 would not investigate a complaint -- a claim thoroughly prior
23 to settling a claim. That would be standards claim practice.

24 MS. PLANISEK: I agree with that.

25 MR. MAGLADRY: Is there -- you mentioned damage from

1 a fire exceeding someone's deductible. What is a typical
2 deductible in our -- I'll ask that question first.

3 MS. PLANISEK: Well, that varies with the operator.
4 Some of our motorcoach operators have deductibles in the 10 and
5 \$20,000 range. Some are 5,000, some are 1,000. It just
6 depends.

7 MR. MAGLADRY: Well, the question is there likely to
8 be fires that have occurred that are not reported to you
9 because they do not exceed a deductible?

10 MR. PLANISEK: Yes.

11 MR. CRESCENZO: Yes. Or because it's not physical
12 damage. As vehicles get older, and if you have a vehicle
13 that's 15 or 20 years old, the -- there might not be physical
14 damage coverage on that because the value of the vehicle is so
15 low to the potential for repair. So if that vehicle -- if
16 there was no other injury, if there was no other damage to
17 property, et cetera, then we might not hear about that as a
18 claim.

19 MS. PLANISEK: That's correct. Yes. If it was just
20 the bus itself, and the bus doesn't carry physical damage
21 coverage, there would be no need to report it to us.

22 MR. MAGLADRY: Thank you. That's all my questions.

23 CHAIRWOMAN HIGGINS: Ms. McMurtry?

24 MS. McMURTRY: Yes. Our initial exploration into the
25 bus fire issue, we found very few deaths and/or injuries, and I

1 have a question for the -- our two insurance witnesses,
2 Mr. Crescenzo and Ms. Planisek. Do you -- has that been the
3 insurance industry's experience as well or --

4 MS. PLANISEK: Yes, it has.

5 MR. CRESCENZO: Yes, I would agree.

6 MS. McMURTRY: Do you have any fatalities?

7 MS. PLANISEK: We have not.

8 MR. CRESCENZO: Lancer Insurance Company does not.

9 MS. McMURTRY: Okay. And, Mr. Daecher, in your -- I
10 believe you, I believe you said this but refresh my memory.
11 Did you experience in your survey any deaths or injuries?

12 MR. DAECHER: There was one minor injury to a driver
13 as he was extinguishing a fire.

14 MS. McMURTRY: And, Ms. Ahrens, in your reporting?

15 MS. AHRENS: In '99 to 2003, we estimate that there
16 were an average of three deaths per year from bus fires and an
17 average of 30 injuries. I should also mention that it is
18 possible that to the fire service once a bus, always a bus,
19 because I know we have at least once incident documented where
20 there was an abandoned, like a school bus or something that is
21 now sort of a hangout for the homeless, which complicates
22 things further.

23 MS. McMURTRY: Okay. Thank you.

24 MS. AHRENS: And we also do have an older fire that
25 did result in a collision, and I think NTSB may have done the

1 investigation on it, that did result in a number of fatalities.

2 MS. McMURTRY: And this again is a question for the
3 insurance witnesses. Is -- have you found the correlation
4 between the age of the bus and bus fires?

5 MR. CRESCENZO: Somewhat. Older -- again this is
6 somewhat unscientific and, and this is an observational review
7 of our data. Older coaches tend to have more fires. However,
8 we have seen a -- as I said earlier, we have seen a spike in
9 fires in relatively new coaches. It seems to be that when the
10 coaches are older, we believe that it's related to maintenance
11 and wear and tear. And when the fires are in new model
12 coaches, it's generally related to the causes that we saw
13 today, the turbocharger, the heaters, the wheel hubs, et
14 cetera. So we, we have seen some developing trend in that
15 area, although I'm not sure that we have enough data even from
16 our data set for our actuarial staff to make a --

17 MS. McMURTRY: Ms. Planisek?

18 MS. PLANISEK: We're not going to see some of the
19 fires involving older coaches because they just don't have the
20 physical damage coverage on that. So it would be hard to make
21 a determine older versus newer.

22 MS. McMURTRY: Okay. And, Ms. Bass, you mentioned
23 that you had reached out to the industry and industry has been
24 responding. Have you found the correlation between age of
25 coach and fire?

1 MS. BASS: No, we haven't analyzed that correlation
2 or that part of it. We haven't done that kind of analysis.

3 MS. McMURTRY: Okay. Ms. Ahrens or Mr. Daecher?

4 MS. AHRENS: In 2003, among the fires for which the
5 model year of the bus was known, 92 percent of the bus and
6 school bus fires had model year of 2000 or earlier.

7 MR. DAECHER: I didn't see any type of correlation in
8 terms of the probability or existence of the fire in relation
9 to the vehicle years. It was pretty spread out between 1995
10 and current model years or new ones, and probably most of that
11 is because most of the operators in the group that I surveyed
12 tend to have buses in that, in that model range. I mean they
13 don't have particularly older buses prior to '95 in their
14 fleets.

15 MS. McMURTRY: Mr. Plachno?

16 MR. PLACHNO: One of the things that has not come up
17 here yet today, that I might mention to you as long as you're
18 talking about age, is that with brand new motorcoaches,
19 anywhere from 10 to 15 percent of them are sold initially for
20 private operation, not for commercial operation. And as the
21 buses age, that percentage increases, to the point that if
22 you're talking about buses that are 50 years old and still on
23 the highways, and there are some of them, you're talking about
24 100 percent private operation simply because the commercial
25 operators no longer run a vehicle that old. So when you start

1 talking about motorcoaches on the road, you need to kind of
2 understand, too, as they age, you've got private operators
3 running these same vehicles in a motor home executive service
4 or entertainer buses.

5 MS. McMURTRY: In your -- from a historical
6 perspective, have you seen an increase in fire related to the
7 age and/or the use?

8 MR. PLACHNO: I have not. Bear in mind again that
9 the private vehicles will run fewer miles and therefore would
10 be less susceptible to a fire simply from the standpoint of
11 usage, but also as you get into some of the older vehicles,
12 you're talking -- a good example, if you go back to the old --
13 like the bus we saw here, the PD4104 with the straight 6
14 engine, and then after that, we had the AP71s. They didn't
15 have turbos. You're not going to have a turbo fire in an
16 engine that doesn't have a turbo.

17 MS. McMURTRY: True. Thank you very much.

18 CHAIRWOMAN HIGGINS: Thank you. I have a few
19 questions. I'd like everybody's opinion on this. Ms. Ahrens,
20 you said that, and I believe I have this correct, that between
21 '99 and '03, there were 2200 bus fires, and you say you think
22 there are between 2,000 and 2600 a year, and then I think you
23 said there were 6 a day. Is that correct?

24 MS. AHRENS: Correct. If you average, sort of divide
25 the 2210 divided by 365.

1 CHAIRWOMAN HIGGINS: Okay. I'm interested, is it
2 fair to say based on all the things that you all have looked
3 at, are there more bus fires now than there used to be?

4 MS. AHRENS: The five year rolling average looks
5 pretty flat in terms of the nineties and later.

6 CHAIRWOMAN HIGGINS: So your data begins in 1990?

7 MS. AHRENS: It actually goes back -- our data goes
8 back to 1980. We have a peak -- peaks in 1980 and '81, and
9 then it's leveled off a little bit but not -- let me just find
10 that page. In 1980 and '81, we had 3100 fires each year, and
11 then it dropped down to 2660 in '82, and that's still -- the
12 most recent peak was in 1998 with a little more than 2900, and
13 the lowest point it hit was 1,980 in 2000.

14 CHAIRWOMAN HIGGINS: Okay. And I assume in that
15 almost 20 plus years time span, that the denominator has
16 changed.

17 MS. AHRENS: I would assume so, but I haven't
18 captured that data. I'll rely on some other folks here
19 perhaps, but again, it's also hard to know when buses are taken
20 off the road. You can look at, perhaps get data on how many
21 are sold but you don't -- I don't know if anybody knows how
22 many are actually still out there.

23 CHAIRWOMAN HIGGINS: Mr. Crescenzo or Ms. Planisek?

24 MR. CRESCENZO: We have, since 1998, have had 231
25 reported bus fire claims. We have as I said earlier, the peak

1 from 1998 to 2005, the peak was in 2001, when we had 39 fire
2 claims reported. 2002, it dropped to 30. That would correlate
3 with a reduction in the number of vehicles we were insuring.
4 In 2003, it dropped to 29, again, correlating to the drop in
5 number of vehicles. In 2004, it started climbing to 30
6 reported claims, and in 2005, to 38, which would also correlate
7 with increasing number of vehicles as Larry has talked about in
8 terms of the expansion of the industry again and the recovery
9 of the industry in that timeframe. So those are the numbers
10 that we have.

11 I can't tell you if that's an increase or not. It --
12 from our point of view, any bus fire claim is quite serious and
13 we would prefer to see none of those for a variety of reasons.
14 So we stay very focused on that.

15 In addition, what we've tried to do from a safety
16 point of view, is to provide our policyholders with this
17 information, and with information about recalls, information
18 about ways to increase maintenance, change maintenance
19 approaches, ways to look at high risk situations, high risk
20 trips, where a bus might be in an overheating situation, an
21 engine or wheel well. So we try to take these trends of our
22 claims and like all claims, and turn them into -- turn it into
23 information to assist the policyholder in avoiding that from a
24 safety point of view.

25 CHAIRWOMAN HIGGINS: Thank you. Mr. Crescenzo, in

1 your presentation, you mentioned that the severity, the
2 percent -- 5 percent I believe was the figure you used, the
3 severity, you saw that as a high ratio.

4 MR. CRESCENZO: Well, in relation to the frequency of
5 a half a percent, .05 percent frequency and 5 percent severity,
6 that's a fairly high ratio, yes.

7 CHAIRWOMAN HIGGINS: And my question then to the
8 panel is that if the number of bus fires are essentially -- I
9 think what I'm hearing is that they are -- the numbers haven't
10 changed that much, and they tend to be influenced by how many
11 -- by the economy and how many people are traveling, reflecting
12 sales, do we see any trends in the severity of these fires?

13 MS. PLANISEK: Well, you're going to see a trend in
14 increasing severity because of the new buses and the cost of
15 the new buses. We have buses that we insure with stated values
16 in the 3, \$400,000 range.

17 CHAIRWOMAN HIGGINS: Okay. Talk to me about that.
18 When you say the new buses and more severe, what's contributing
19 to that?

20 MS. PLANISEK: The turbocharger fires. We've had
21 wheel bearing fires. The causes that the -- the four main
22 causes that were brought up earlier are really -- correspond to
23 what I've seen in National Interstate as well.

24 MR. CRESCENZO: The cost of coaches, new coaches,
25 has, has increased. The market for used coaches, and Larry

1 might want to comment on this, has -- fluctuates a bit and has
2 fluctuated over the years with the economy, but the cost of a
3 new vehicle, a brand new vehicle, a 2006 model might be
4 anywhere from 4 to \$500,000 depending upon what is purchased as
5 extras within the vehicle. So therefore the physical damage
6 cost is high on that, and so that is reflected in having to
7 repair that vehicle. If it's a total loss, and there is a
8 \$350,000 value, then, then the insurance claim, if it's a total
9 loss, we pay \$350,000, for either the repair or the replacement
10 of that vehicle.

11 CHAIRWOMAN HIGGINS: So the severity is really
12 related to the source of the fire and not to the materials
13 question. We've had some comments made about the change in
14 materials used in, in buses and motorcoaches. I'm wondering if
15 there's any correlation or whether you see any trend there?

16 MR. CRESCENZO: Well, I think they are two different
17 issues. Severity is an insurance term related to cost.

18 CHAIRWOMAN HIGGINS: Right.

19 MR. CRESCENZO: Cost of replacement, cost of settling
20 a claim, not to be confused with the seriousness or severity of
21 a fire. The -- there's no doubt that as Larry said earlier,
22 that as the -- the way coaches have been manufactured and the
23 materials used has changed, the, the way the fires burn from a
24 fire perspective as the coaches have gotten lighter, is an
25 attempt to make the vehicle lighter to meet a variety of

1 customer requirements, fuel use requirements, et cetera, et
2 cetera, as all of that has added into the manufacturing of the
3 vehicle, some of the materials in that vehicle and the
4 construction of that vehicle might, in fact, contribute to the
5 rapid burning versus the initial cause.

6 CHAIRWOMAN HIGGINS: Does anybody else have a comment
7 on that?

8 MR. DAECHER: Yeah. And when you talk about
9 severity, I mean I think it's directly related to the actual
10 cause of the fire. Some fires are going to definitely more
11 severely affect the coach than others. From what we know,
12 engine fires obviously can be addressed using engine fire
13 suppression systems which tend to work fairly well in terms of
14 recognizing the fire, controlling it. Windows are usually
15 damaged to the coaches, as many electrical fires outside of the
16 engine area generally can be addressed and put out with the
17 equipment that's on the coach. On the other hand, if you have
18 a vehicle fire that involves a tire or begins in a wheel well,
19 once that tire catches on fire, there's almost no way for --
20 except for a fire crew when they finally get there, to get that
21 fire out. There's no way with the equipment on the coach to
22 put that out, and, and we know these coaches go up very quickly
23 once they do catch on fire and the fire begins to propagate.
24 So by the time the fire responders get there, it's already way
25 too far gone. So when you have that type of tire fire, or a

1 fire involving the wheel well area, you're going to have a very
2 severe incident in terms of the damage to the coach.

3 CHAIRWOMAN HIGGINS: Mr. Plachno?

4 MR. PLACHNO: My past experience has been that if the
5 fire is caught early enough and can be put out or dealt with in
6 some way, you're not going to see too much damage to the
7 vehicle. However, if you don't catch it early enough and it
8 starts propagating, it tends to spread which is why I think the
9 manufacturers going to the tire monitoring and the fire
10 suppression systems are a good start in the right direction.

11 CHAIRWOMAN HIGGINS: Thank you. You're anticipating
12 my next question, which is really on suppression. Right now as
13 I understand it, the requirement, is going to come up for the
14 next panel, but as a 5 pound fire extinguisher, is that --
15 Mr. Crescenzo, you mentioned that you've encouraged your
16 companies to have a more robust safety program. What are, what
17 are you finding in terms of what's a success in putting out
18 these kinds of fires?

19 MR. CRESCENZO: Well, again, this is from a safety
20 perspective. We have been -- well, Lancer has been a proponent
21 from a safety perspective for multiple years of, of fire
22 suppression systems, entire monitoring systems. We believe
23 that they are an excellent approach, if properly installed,
24 properly manufactured, to, to mitigate a fire once it starts.
25 We also believe that training for drivers, passengers,

1 customers, in terms of evacuation is a huge, is a huge help.

2 However, we believe that the 5 pound fire
3 extinguisher is essentially useless in terms of the current
4 materials used in constructing a coach. And so again, our
5 approach has simple been to try to get our policyholders to
6 understand what the risks are. So we encourage the use of a 20
7 pound extinguisher because it increases the amount -- it's a
8 higher pressure, and if used properly, and train the driver,
9 whoever's using it is trained properly, you might get as much
10 as 1 1/2 to 3 minutes of fire fighting power if it's used in
11 spurts and in short bursts.

12 However, that, that is only in an instance where,
13 one, we tell our policyholders to evacuate the coach -- stop,
14 evacuate the coach immediately, then call for help, get
15 everyone away from the coach and then if there's any
16 possibility of controlling that fire, then we would encourage
17 that. That's the third thing on the list of things we tell our
18 policyholders.

19 So we believe that the fire extinguisher issue would
20 solve -- would assist in certain fires particular for older
21 coaches because when we talk about fire suppression systems,
22 entire monitoring systems on new model coaches, 2006 forward.
23 There are a huge number of coaches that are manufactured
24 beforehand that will not have those systems. So we're trying
25 to find multiple ways to, to solve the problem.

1 CHAIRWOMAN HIGGINS: Thank you. That's very helpful.
2 And, Ms. Bass, finally, I'm interested in the joint program
3 with NHTSA. When did that program begin?

4 MS. BASS: It began in April of this year.

5 CHAIRWOMAN HIGGINS: Of this year. And how many
6 accidents are you currently looking at?

7 MS. BASS: It's a fledgling program. We have data on
8 eight bus fire incidents.

9 CHAIRWOMAN HIGGINS: And those are eight bus fires
10 that have occurred since the program began or --

11 MS. BASS: Since the program began, yes.

12 CHAIRWOMAN HIGGINS: Okay. And you mentioned I
13 believe that you're notified from a variety of different
14 sources. When do you expect to have any -- draw any inferences
15 or conclusions from those accidents? Are you adding more
16 accidents all the time?

17 MS. BASS: We are adding more accidents all the time.
18 Like I say, we do collaborate with our counterparts in NHTSA to
19 determine which accidents should be investigated because we
20 certainly can't investigate all of them. But, yes, we are
21 adding to the database all the time.

22 CHAIRWOMAN HIGGINS: Have you made a formal request
23 to industry or a formal request to the states for information
24 on bus fires?

25 MS. BASS: Not a formal request per se, but we have

1 at safety workshops, at -- meetings, we have discussed on
2 numerous occasions the issue of bus fires and the need for bus
3 fire data and that's where we have approached the industry
4 basically in terms of providing us with whatever personal
5 experiences or the company's experience dealing with this whole
6 bus fire problem.

7 CHAIRWOMAN HIGGINS: So there's not at this point a
8 request for uniform data, uniform information in terms of what
9 the states might be capturing?

10 MS. BASS: Well, are you talking about the industry?

11 CHAIRWOMAN HIGGINS: Both. I think I asked both
12 about states and industry.

13 MS. BASS: Right now the states do provide us with
14 standardized information. We capture that information through
15 our truck and bus accident reporting system. However, that
16 data is very, very limited. We do not have a bus fire database
17 per se. We have a crash database, a commercial vehicle
18 database which contains some bus fire information. And that
19 information is standard.

20 CHAIRWOMAN HIGGINS: I guess what I'm asking is,
21 Ms. Ahrens reported that she's working with the database that
22 comes from the states, and I'm asking whether that's a database
23 that you all are now using.

24 MS. BASS: No, we are not using Ms. Ahrens database.

25 CHAIRWOMAN HIGGINS: And, Ms. Ahrens, I just

1 wanted -- you mentioned that there's -- that there is a
2 variety -- the states have varying standards in terms of what
3 they require to be kept. Can you give us a sense of how many
4 states would fall into the mandatory reporting versus not at
5 all?

6 MS. AHRENS: I'm not sure how many have mandatory
7 reporting. However, with the computer age, and with the need
8 to justify budgets, far more fire departments are not
9 documenting all of their activities because when it comes time
10 to seek funding, they need to show their city -- community
11 leaders what they are doing to justify their funding requests.
12 So that has resulted in an increase in participating
13 departments because of their own self-interest, and in
14 addition, with the increase in computerization, it is now a lot
15 easier to document all incidents and that has increased the
16 numbers of people using that.

17 CHAIRWOMAN HIGGINS: Is the reporting standard across
18 the states even though the requirements for reporting are not
19 standard?

20 MS. AHRENS: If the departments are participating in
21 NFIRS, they agree to either use the NFIRS coding system or in
22 some cases they've modified it somewhat but convert their data
23 back into the standard system to submit it to the U.S. Fire
24 Administration. I believe that that was more common in earlier
25 versions.

1 CHAIRWOMAN HIGGINS: Okay. Thank you. I don't have
2 anymore questions. Are there any other questions from the
3 parties? Any follow up questions?

4 MR. MEDFORD: Yes, I have one. Thank you. This is
5 for the insurance companies. This goes back to Mr. Plachno's
6 statement about the second egress door and that company have in
7 fact stopped producing or purchasing those buses or coaches
8 because of the liability issues, and I wondered if the
9 insurance companies have looked at the issues related to a
10 second door egress and whether your premium structure would be
11 different with respect to the second door.

12 MS. PLANISEK: I know we have not, and I can't speak
13 to premiums specifically, but I don't think we have anything in
14 place for a premium adjustment.

15 MR. CRESCENZO: Yeah, I would agree. I don't think
16 we've looked at that.

17 MR. MEDFORD: Thank you.

18 CHAIRWOMAN HIGGINS: If there are no other questions,
19 we will dismiss this panel. We are remarkably running ahead of
20 schedule. So I think we will swear in the next panel and, if
21 that's agreeable with my colleagues, and we'll move forward on
22 that, and then we'll take a break.

23 (Off the record.)

24 (On the record.)

25 CHAIRWOMAN HIGGINS: Would everybody take their

1 seats? And our next panel to take their seats. Could I ask
2 our audience members to take their seats if you're in the
3 auditorium or to take your conversations out in the foyer
4 please?

5 Our next panel is going to focus on the source of the
6 Wilmer motorcoach fire, the issues of propagation, fire
7 propagation and fire suppression. We are running ahead of our
8 schedule. So we're going to hopefully be able to finish the
9 questions from the Technical Panel and then break before we
10 turn it over to the parties. If not, then we will make an
11 executive decision and break sooner than that, but that would
12 take us hopefully another hour or so, and then we'll give
13 everybody, maybe a little longer lunch break than we planned.

14 Ms. McMurtry.

15 MS. McMURTRY: As before, I'll swear in Panel 3
16 together. Mr. Capstick, Mr. Johnston, Mr. Skipper,
17 Mr. Queiser, Mr. Bevins and Mr. Saul, would you raise your
18 right hand?

19 (Whereupon,

20 BOB CAPSTICK, PAUL JOHNSTON, TONY SKIPPER,

21 BRIAN QUEISER, EMMETT BEVINS, ROGER SAUL

22 were called as witnesses, and having been first duly sworn,
23 were examined and testified as follows:)

24 MS. McMURTRY: Okay. Mr. Capstick, would you give us
25 your full name, business -- well, firm that you work for and

1 business address please?

2 MR. CAPSTICK: My name is Robert Lloyd Capstick, and
3 I work for Motorcoach Industries located at 1475 Clarence
4 Avenue, Winnipeg, Manitoba, Canada.

5 MS. McMURTRY: And how long have you been in your
6 current position?

7 MR. CAPSTICK: My current position is Senior
8 Technical Advisor. I've been in that position approximately
9 just a little over one year. Prior to that, I was the Director
10 of Engineering for about 17 years.

11 MS. McMURTRY: Okay. And what are your duties and
12 responsibilities?

13 MR. CAPSTICK: Providing support and direction to the
14 engineering department, and to the project groups as they go
15 along.

16 MS. McMURTRY: Okay. Thank you. Mr. Johnston, could
17 you state your full name, your current employer, your title and
18 your company address?

19 MR. JOHNSTON: Yes, Paul Milton Johnston,
20 ArvinMeritor Incorporated, 2135 West Maple Road, Troy,
21 Michigan. My current title is Senior Director, North American
22 Foundation Brake Business Unit. I have responsibility for
23 product engineering, product management and product planning
24 for air and hydraulic foundation brakes for North America.
25 I've been in that position approximately three years.

1 MS. McMURTRY: Thank you. Mr. Skipper, could you
2 state your full name, your current employer, your title and
3 your company address?

4 MR. SKIPPER: I'm Anthony Charles Skipper. I work
5 for the Timken Company, a manufacturer of bearings in Canton,
6 Ohio. I am the Chief Engineer for the Technical Services.
7 That's a function within our corporate quality group, and my
8 function basically is to coordinate company response in
9 technical issues.

10 MS. McMURTRY: Okay.

11 MR. SKIPPER: I've been in that position for about
12 eight years.

13 MS. McMURTRY: Thank you. Mr. Queiser, could you
14 state your name, your employer, your title and your company
15 address?

16 MR. QUEISER: Yes. My name is Brian Queiser. I work
17 for Bridgestone Americas. That's located at the Akron
18 Technical Center, 1200 Firestone Parkway, Akron, Ohio. I am a
19 Senior -- I'm sorry -- a Manager of the Product Analysis
20 Department. We're consulted by entities within the company and
21 external to the company on safety, risk prevention and failure
22 analysis matters.

23 MS. McMURTRY: And how long have you been doing that?

24 MR. QUEISER: I've been in that position about five
25 years.

1 MS. McMURTRY: Okay. Thank you. Mr. Bevins.

2 MR. BEVINS: John Emmett Bevins, with Amerex
3 Corporation, in Trussville, Alabama. I am a Vehicle Fire
4 Suppression Systems Product Manager. I have been that for 13
5 years, designing vehicle fire suppression systems.

6 MS. McMURTRY: And, Mr. Saul.

7 MR. SAUL: I'm Roger Saul with the National Highway
8 Traffic Safety Administration here in Washington, D.C. I'm the
9 Office Director in the Rule Making Office of the
10 Crashworthiness Standards Division. I've been in that position
11 for about five and a half years.

12 MS. McMURTRY: Okay. Thank you. Member Higgins,
13 Panel 3 has been sworn, and they are qualified, and Mr. Yohe,
14 will you start your questions.

15 MR. YOHE: Okay. The first three panelists are going
16 to address technical issues surrounding the fire at Wilmer.

17 I'd like to start out with Mr. Capstick first.
18 Mr. Capstick was on scene with us. He assisted the NTSB at the
19 vehicle examination in Wilmer, Texas, and regarding, regarding
20 any issues as far as what actually, you know, may have, may
21 have started the fire at Wilmer, based upon your observations
22 on scene and also any post-scene component examinations,
23 research, just in your opinion, like how -- what actually are
24 the factors that started the fire at Wilmer?

25 MR. CAPSTICK: At this point, can I ask you to turn

1 on slide 1? I'd like to go through a brief review of our
2 observations and there are several slides that I would like to
3 go through.

4 The first one is more or less a repeat of one that
5 was shown by Mr. Van Etten earlier. The first major
6 observation that I made when I arrived on the scene was that
7 the right-hand tag axle had been chained up and as shown in
8 this first slide, a closer examination of the center hub area
9 showed that the hub was not concentric to the spindle, and that
10 led me to believe that there was an obviously wheel bearing
11 problem with the coach at that point.

12 Not wanting to disturb anything beyond that, we then
13 went to the first tire that had -- next slide please -- the
14 first tire that had gone flat, and we removed it from the spare
15 tire compartment where it had been placed. We saw again the
16 flat that was shown earlier in Mr. Van Etten's slides, and then
17 we went to the scene of the first incident and we saw where the
18 incident first started, and in this photograph, you can see
19 where the slide of the first wheel started. That's an obvious
20 lockup when the wheel started to slide. It was just prior to
21 an overpass shown in this slide.

22 At the next slide, you can see that somewhat down or
23 further north than this point, the driver obviously realized
24 that he had a problem. He tried to pull off the road to find a
25 spot where he could get and he pulled off at an on ramp,

1 pulling over to the side. For some reason, he decided that
2 that spot was not suitable to stop and carried on down the
3 road. Go to the next slide please.

4 You can see in this next slide that the overpass that
5 had been seen in the first or second slide was -- first slide
6 was barely visible in the distance, and when we go to the next
7 slide, it's even less visible and going to the final location,
8 it's -- the final slide, slide number 8, at that point it's,
9 it's basically not -- the overpass is basically not even
10 visible.

11 We knew from that picture that whatever caused the
12 wheel to lock up at that point had been corrected or the
13 problem had been eliminated when they changed the wheel because
14 when it started to move again away from that spot, it rolled
15 again. It did not skid.

16 Going to the next slide, we skip right through to
17 after the fire. We see that the second wheel at the scene had
18 obviously skidded again to the point where it had flattened the
19 second steel spare wheel that had been put on the coach at that
20 point.

21 Next, we decided that we would look at the left-hand
22 tag axle, tag wheel end, to try and determine or to -- to use
23 as an example of what everything on the right-hand side should
24 look at -- look like, but when we took the left-hand wheel
25 apart, we found that basically everything was in, in good shape

1 with the exception that the knuckle and torque plate on the
2 knuckle was heavily coated in oil and dirt, showing that there
3 had been at least for some considerable period of time, a
4 fairly heavy oil leak.

5 The next slide shows the same thing from a slightly
6 different perspective as does the next slide -- no. Then we
7 moved to the right-hand tag axle, taking off the wheel end, the
8 wheel, and the -- taking the chain off, let the hub drop down
9 to its unsupported position, which you can see by the angle of
10 this rotor in this slide, obviously there is a great deal of
11 misalignment visible at this point. There's almost certainly
12 no support from any outer wheel bearing at all at that point.

13 We also noticed at that point in time, going to the
14 next slide, that the right-hand caliper had been, and I'm going
15 to use the word sawn, because the rotor turning on the wheel
16 for some period of time had been supporting the brake caliper,
17 and you can see where it has eroded right through the back end
18 of the brake caliper in this, in this slide.

19 Once the caliper was removed, the next slide shows
20 how much the rotor had actually worn into the caliper, and the
21 fact that it had failed at some point presumably by a brake
22 application which would have put side forces on this.

23 We then started looking at the hub and bearings, and
24 you can see in this next slide that there are remnants of what
25 turned out to be the rollers from outer wheel bearings that

1 were -- are shown in place in the hub and roughly at that point
2 in time, one of the other NTSB people on the scene had
3 retrieved from the fire that was mentioned at something like
4 2.3 miles down the highway or 2.6 miles prior to the fire
5 scene, they retrieved what they thought looked like a bearing
6 roller. When we tried to fit that into the hub it fit
7 perfectly. As you can see in this photograph, it almost
8 certainly was an outer wheel bearing roller.

9 The next slide shows the inner wheel bearing rollers,
10 and as does the following slide also shows the rotor. In this
11 case you see no grease on anything, no oil residue. We believe
12 everything had been totally burned off this by the intense heat
13 of this. Obviously the bearing rollers to sustain this type of
14 damage had been extremely hot. I'm not a metallurgist. So I,
15 I won't say that I know exactly the numbers but I'm sure it was
16 well in excess of 1500 degrees in order to get to this kind of
17 state.

18 The next slide shows the hub, where the rollers on
19 the inner bearing had moved to the top, the hub had been
20 rolling on the bottom of the spindle, supplying in effect the
21 whole support for that wheel at that point, which goes to the
22 question as to what started the fire. It is my opinion that
23 the cause of the fire ignition was the second tire, which
24 overheated and became flat by explosion of some sort. Pieces
25 of rubber found on the highway indicate that that happened

1 shortly before the vehicle was stopped, and that some of those
2 pieces of rubber came in contact with this superheated metal at
3 the time the vehicle was stopped, thus causing the ignition.

4 MR. YOHE: Okay. You showed, you showed us
5 photographs of the, the suspected roller -- the roller that was
6 found out in the, that was found out in the first grass fire,
7 and you also showed us the picture there. How would -- in your
8 opinion, how would these rollers, roller bearings, how would
9 they get to the place where the temperature would be so high
10 that they would deform like -- that they would deform and
11 actually, you know, start a fire?

12 MR. CAPSTICK: By lack of lubrication.

13 MR. YOHE: Okay. In your opinion, in your opinion,
14 do you feel that that's the only thing that could have deformed
15 the roller bearings is the lack of lubrication?

16 MR. CAPSTICK: The lack of lubrication does not by
17 itself cause deformation of the roller bearings. It's a
18 progressive failure that once the wheel hub and probably the
19 bearing people are far more, Tony Skipper is probably far more
20 qualified to respond to that question, but I believe that once
21 the bearing loses its lubrication, it starts to generate
22 surface heat and, and that becomes an exponential event to the
23 point where we see what we saw in this case.

24 Once the cage of that outer roller bearing
25 disintegrates, rollers go in many directions inside the hub and

1 once something -- some roller jams in some way, it will lock
2 the hub and cause it to stop rolling in some instances.

3 MR. YOHE: Could you tell us if MCI has any published
4 recommended maintenance practices for maintaining the wheel
5 bearings on your coaches, and if so, what they are? Especially
6 this coach, the E Series Renaissance.

7 MR. CAPSTICK: Well, our recommended maintenance
8 practice -- maintenance manual recommends daily inspection of
9 the lubrication levels in the wheel hubs.

10 MR. YOHE: Okay. We're just going to leave that
11 topic just for a minute, and I want to ask you generally,
12 generally, have you seen a -- any type of increase in, in bus
13 fires in the last let's say 10 years?

14 MR. CAPSTICK: I'm not sure that I have. I certainly
15 have no data to show that there's been any increase. I don't
16 get data, as it's not surprising, from the panel that was on
17 here before us, that even the insurance industry doesn't have
18 really overwhelming data, but back in the engineering
19 department at the manufacturer, we see much less data that
20 would support that. There would certainly be more in the last
21 year or two, more publicity regarding fires, and I don't know
22 if that's because of more fires or more fires are being -- or
23 fires are being reported better. I can't answer that question.

24 MR. YOHE: We've had several witnesses in the
25 previous panel mention turbo fires. I would like to ask you,

1 do you have any reason to believe that engines are -- engine
2 compartments and engines are running hotter than what they were
3 let's say 10 or 15 years ago?

4 MR. CAPSTICK: Well, I do believe that the engine
5 compartment is running slightly hotter. I know that the engine
6 temperatures, the engine thermostat temperatures have increased
7 in the last several years at the request of the engine
8 manufacturers. But it's not been huge increases in, in engine
9 compartment temperatures but, yes, there has been some.

10 MR. YOHE: Okay. Do you think the engines
11 themselves, any specific components on the engines themselves
12 or in the engine compartment that are running hotter than what
13 they were, let's say prior to the onset of the four stroke
14 engine and, and turbochargers. In other words, prior to the
15 turbocharged engines?

16 MR. CAPSTICK: Certainly the turbocharger is a, a
17 considerable source of engine compartment heat that obviously
18 was not there prior to turbocharged engines. And, in fact, in
19 the last several years, it's producing more heat now than it
20 did years ago.

21 Also engines are bigger and higher horsepower than
22 they were a few years ago. So that's contributing to more
23 heat. The bigger the engine, the less room there is around it.
24 There are more peripheral equipment built in, tucked in around
25 engines now than there were before. So it is -- it is not so

1 surprising to me that temperatures have increased somewhat.

2 MR. YOHE: Okay. You again, going back to the
3 previous witnesses, we've had several mention the turbo,
4 turbocharger fires. Is this a condition, a situation that MCI
5 has been aware of, and do you know if there's been any action
6 taken by the engine manufacturers?

7 MR. CAPSTICK: I do know that one engine
8 manufacturers, Detroit Diesel, has issued a, a NHTSA recall on
9 a turbocharger, that affects buses going back for several
10 years.

11 MR. YOHE: And when -- can you tell us approximately
12 when this recall -- how long ago it came out?

13 MR. CAPSTICK: I'm going to estimate that it was
14 three months ago.

15 MR. YOHE: Okay. Thank you. Do you see any
16 relationship -- do you think there's a relationship between hot
17 engine compartments and bus fires?

18 MR. CAPSTICK: I have no data that can support that
19 at this point.

20 MR. YOHE: Okay. Is, is MCI doing anything at all to
21 address the problem with bus fires and what appears to be a,
22 not necessarily the numbers but the severity of the fires going
23 up? Is there anything that MCI is looking at or anything doing
24 to address bus fire problems?

25 MR. CAPSTICK: Starting in 1990 or early 2000, MCI

1 offered an Amerex fire suppression system, and the popularity
2 of that system has increased at this point. It's certainly not
3 universal but the number of buses being sold with fire
4 suppression system has increased. In addition, in 2006, late
5 2005, we introduced the smartire pressure monitoring --
6 pressure and temperature monitoring system, that's available on
7 our coaches.

8 MR. YOHE: Okay. What is the size, size of a fire
9 extinguisher on a current coach, on one currently being
10 produced that you would sell?

11 MR. CAPSTICK: The vast majority of coaches go with a
12 fire -- a 5 pound fire extinguisher, although some of our
13 customers have for years -- larger fire extinguishers, the
14 largest being a 20 pound.

15 MR. YOHE: Okay. Okay. What I'm going to do,
16 Mr. Panagiotou has questions for Mr. Capstick. We're going to
17 hold those right now so we can stick with the topic of the axle
18 and wheel bearings, and then we'll come back to that. That's
19 all I have for you right now, and I want to go to Mr. Johnston.

20 Mr. Johnston, we know at the request of NTSB that you
21 assisted in the investigation. You were on scene and you also,
22 you know, had a chance to view the evidence, the physical
23 evidence first hand. Can you give us any of your observations
24 regarding the, the axle and the axle, the housing, the
25 bearings, the brake system, and so forth?

1 MR. JOHNSTON: Larry, I think the first thing I want
2 to say is that pretty much that makes or falls along with what
3 Mr. Capstick was saying as far as the overall conditions. When
4 we first came on site, we immediately noticed the condition of
5 the right rear tag axle, wheel end, and the fact that it was
6 chained in position, and could quickly tell that there had been
7 some significant bearing damage or loss of bearing
8 concentricity in the wheel end assembly, and the fact that the
9 rotor that's attached to this hub, that the bearings do
10 support, had made contact -- had made significant contact with
11 the caliper torque plate and the linings of the air disc brake
12 on that wheel. The pictures that Mr. Capstick had shown some
13 of the damage to the caliper, the grinding marks on the torque
14 plate. What was not visible there was some excessive tapered
15 wearing of the outer pads and inner pads of that brake which
16 goes in line with the out of concentricity or out of concentric
17 position of the rotor hitting the disc brake.

18 As we started out early in that investigation, we did
19 a -- I'm going to say a complete vehicle walk around to look at
20 the overall condition of the brakes, and especially the wheel
21 end on the left side of the tag axle. We felt in discussion
22 with the NTSB investigating team that it would be appropriate
23 to use that wheel end as a good example to demonstrate how we
24 will go about investigating the hub assembly of the disc brake,
25 and to look at the performance of the brake itself.

1 Again as Mr. Capstick showed in some the scenery
2 there in the pictures, we did notice that the wheel seal on
3 that particular wheel end had at some point in time started to
4 leak, and that the hub had lost significant, if not all of the,
5 lubricating oil on that wheel bearing into the cavity behind
6 the hub itself.

7 Our primary focus when we looked at the left tag axle
8 was also to make sure that the disc brake was operating
9 properly. We inspected lining, lining thicknesses, rotor wear
10 and we did that around the entire vehicle and especially
11 focused on the right rear tag axle brake as well. And all
12 indications, based on what we could do with the brakes and the
13 wheel ends, we found that the brakes were properly sliding in
14 their positions, and that they were adjusting or were to an
15 adjusted point. Lining wear was pretty reasonable considering
16 the mileage. There was no evidence of any hot running brakes
17 and any mis-operation, if you will, of the foundation brakes
18 and the rotor itself.

19 So we -- as we worked with NTSB and the other parties
20 in the investigation, came back and focused on the wheel end
21 and how the bearing conditions has been found and tried to
22 troubleshoot and identify through our discussions and our
23 measurements and that, exactly what could have been the cause
24 of those bearings to melt and start to move.

25 MR. YOHE: Mr. Johnston, could you tell us, you know,

1 basically how do you determine what size bearing goes on a
2 particular axle?

3 MR. JOHNSTON: The process really starts with the
4 vehicle OEM submitting to ArvinMeritor and probably many of the
5 other axle manufacturers, an application request which is a
6 very specific list of information that the axle and brake
7 engineering functions require for any axle application on a new
8 vehicle. And there's a lot of information related on the gross
9 vehicle weight itself as far as what is going to be the laden,
10 unladen weights, number of axles, wheel sizes, general vehicle
11 information that will help us analyze the particular brake and
12 axle application. Further, we look at the type of service the
13 axle is going to be placed into, and that's typically looking
14 at whether it's a on-highway or a combination on or off highway
15 application. And then last, but not least, the overall service
16 that the vehicle will be seeing, whether this was a line haul
17 tractor type application, city bus or a highway coach, in the
18 case of this vehicle. So we go through this rather extensive
19 analysis of the vehicle, the application, the duty cycle that
20 we're projecting for this vehicle. And this axle and brake
21 assembly, and we go through some engineering analysis tools
22 that we've developed over the years, basically look at how the
23 axle's been designed and the types of bearings that are
24 standard in that particular axle portfolio. And we determine
25 projected life of the bearings based on the loads, track of the

1 vehicle, the overall condition of the -- I should say the
2 overall wheel and tire information that's given to us in the
3 application.

4 And then we have some dialogue between our suppliers
5 in some cases, the bearing suppliers, seal suppliers, the
6 foundation brake functions, as well the OEM to validate that
7 this application will meet the intended service and duty of the
8 particular vehicle that's going to be put into service.

9 So it really relies on a tremendous amount of
10 communication between the suppliers, our customers and the
11 overall application of our products that are in production for
12 those vehicle installations.

13 MR. YOHE: When you ship this axle to, you know, like
14 in this case, like MCI, do you make any recommendations as far
15 as maintenance of the wheel bearing or is that something that's
16 left strictly to the -- to your customer or like in this case,
17 MCI or any bus, any truck or bus customer.

18 MR. JOHNSTON: The typical product that ArvinMeritor
19 would sell has documented, published maintenance information,
20 repair service information and detail on how to service the
21 particular products. We share that information with the
22 vehicle OEM so that they can include that information in their
23 vehicle manuals and their vehicle reference books and likewise,
24 we publish our own information as far as recommended
25 maintenance, what types of service should be done, frequency of

1 service and the types of materials to be used in the servicing
2 process.

3 MR. YOHE: Another question regarding the fire
4 itself. Could you try to explain to us, and Mr. Capstick
5 touched on this, how does a wheel bearing, a wheel bearing that
6 goes bad, how does that actually lead to a fire, if that's
7 something you feel like you can answer or give us your
8 assessment of?

9 MR. JOHNSTON: The primary, I guess, cause is
10 definitely high friction or the loss of lubrication and the
11 functions of the bearing, that it's supporting the weight in
12 that particular assembly, with the loss of lubrication which we
13 saw on this, on this case, that was the obvious conclusion
14 would be that as the oil is being lost in that cavity, we had
15 an increase in friction because of the loss of lubrication
16 between the bearings and the, and the races that the bearings
17 run in. That resulted because of the high context stresses.
18 Typically the bearings are there for that purpose, to absorb
19 that level of bearing or bearing load. That caused friction
20 which started to metallurgically break down the bearing
21 elements themselves, which as Mr. Skipper probably will give
22 you much more detail, would start to increase temperature to
23 the point where the bearings start to run into each other and
24 the friction just continues to build on itself over time as
25 the, as the motion continues.

1 We concluded based on the analysis there that as
2 these bearings continue to deform and, and increasing in
3 friction, the stick, slip and the sliding of the -- that whole
4 mechanism, that continued to change the orientation of the
5 brake rotor and hub assembly, which started to cause contact
6 with the foundation brake, which also increased friction
7 between the cast iron and the ductile iron of the brake parts.

8 That caused again a significant increase in temperature, and
9 the metal temperature as well as the air temperature around
10 that tire bearing, foundation brake cavity, as the vehicle came
11 to rest or as the now deflated tire came in contact with that
12 area, we clearly had metal temperatures in excess of the
13 temperature required to ignite the rubber tire which we believe
14 is what basically caught on fire.

15 We don't feel that the bearings or the brake itself
16 caught on fire. It was the source of the temperature and the
17 heat to result in the tire to become engulfed in flames.

18 MR. YOHE: Mr. Johnston, you saw the photographs of
19 the tire marks back where we had the first flat tire. There
20 was the 6800 feet tire marks. What do you believe actually --
21 I mean do you believe the bearing in and of itself could lock
22 that wheel or was it the orientation of the, the rotor, you
23 know, contacting the brake pads that helped the process. Could
24 you just tell me what you believe, you know, locked that --
25 that would cause that wheel to lock?

1 MR. JOHNSTON: I believe at that point in time which
2 was where the initial wheel lock occurred, that the outer
3 bearing had begun to fail, and that we were seeing an initial
4 lock up of that wheel assembly because of that bearing. There
5 was no indication that the brake, because it was still
6 actuating at the end of the, at the end of the process, that
7 there was no indication that the brake itself had caused any
8 kind of a temporary wheel lock, and that it was all related to
9 the outer bearing starting to fail.

10 MR. YOHE: Okay. Mr. Capstick, the same question.
11 Would you, as far as what actually, what actually locked the
12 wheel? Would you give us your opinion on that?

13 MR. CAPSTICK: I concur with Mr. Johnston's feeling
14 that it was the wheel bearing, not the brake.

15 MR. YOHE: Okay. But when the outer bearing breaks
16 down we might say because of heat, things start to deform and,
17 of course, we did see, we did see the angular wear on the brake
18 pads themselves. So when that outer bearing breaks down, I
19 mean wouldn't the -- couldn't that cause an inadvertent like
20 brake application?

21 MR. CAPSTICK: As the, as the outer wheel bearing
22 does -- the rollers start to move out of place, yes, you will
23 get the angular movement of the hub contacting the -- which
24 moves the rotor to contact the brake pad. That will be a
25 progressive situation until it is stopped, and the longer it is

1 run with the -- with no outer wheel bearing, the more it will
2 cant to the side and the rotor will move sideways into the,
3 into the brake pads.

4 MR. YOHE: I guess, you know, one of the things I'm
5 trying to, trying to get at, would the bearing itself, the
6 failure of the bearing itself, would that -- could that cause a
7 high enough increase in the heat to start the fire on -- the
8 tire on fire, or would it take the help of the, in this case,
9 the rotor contacting the pads? In other words, having two
10 sources of heat?

11 MR. CAPSTICK: I'm not sure that I'm qualified to
12 answer that. That question may be more appropriately asked of
13 Mr. Johnston.

14 MR. YOHE: Mr. Johnston, do you have an opinion on
15 it, whether the heat -- in other words, once the outer bearing,
16 you know, began to deform, and it changed the plane of the
17 rotor, and we had contact there with the brake pads, would -- I
18 mean would that not create an additional source of heat?

19 MR. JOHNSTON: It definitely would create an
20 additional source of heat as the rotor contacts the outer pad.
21 In this wheel installation, the outer pad is sitting pretty
22 much inside the wheel itself. So the heat source, if you will,
23 would be against that pad but it would not be in direct contact
24 with the tire or I should say the rubber tire itself. It would
25 have a radiating heat source from that contact going up into

1 the inside diameter of the wheel itself, which definitely would
2 contribute to a temperature rise into the tire. But to say it
3 started a fire based on our experience, it would be I think a
4 very minimal chance of that happening.

5 MR. YOHE: Okay. One more question for you,
6 Mr. Capstick. As far as the, as far as the bearing itself, the
7 bearing itself, do you believe that that could generate enough
8 heat to, to -- if there were no, if there were no, like
9 inadvertent brake applications, brake applications because of
10 the, the orientation of the rotor, do you think the bearings
11 itself could actually cause the tire to get hot enough to, to
12 ignite, if that's something you have an opinion on?

13 MR. CAPSTICK: It could possibly generate a
14 considerable amount of -- quite likely generate a considerable
15 amount of heat into the tire and cause the tire pressure to
16 increase very dramatically, but I do not know whether it would
17 ever be sufficient from the outer wheel bearing, enough heat
18 generated to cause the tire to ignite by itself.

19 MR. YOHE: Okay. Now, Mr. Skipper, I wanted to bring
20 you into this. Probably I should have started with you with
21 some of these questions but I just -- I want to ask you, could
22 you just very briefly tell us, you know, what a wheel bearing
23 actually does?

24 MR. SKIPPER: Well, first a piece of terminology.
25 The word bearing itself, I've heard used two different ways

1 today. First I think from Mr. Van Etten, he was talking about
2 what I would call rollers, the rolling element of a bearing.
3 You hear it more in ball bearings, people will talk of the
4 little circular steel things as being a ball bearing but, in
5 fact, it's a ball. And the bearing is really a make up of
6 several components. There's an inner race that sits stationary
7 on the spindle and you saw a very damaged one in the
8 photographs there. And there's an outer race that is pressed
9 into the hub and that rotates with the wheel, and in between
10 those, there's a set of rollers. Now all of those components
11 are actually tapered. They're angled, so that we have a
12 bearing that -- in the case of tapered roller bearing can take
13 both the up and down loads and the side to side loads that you
14 might have on a wheel. And then a final component is a cage or
15 retainer which actually holds the rollers onto the inner race
16 for assembly and tends to space those rollers in operation.

17 And really what a bearing is doing, it has three
18 functions. It allows rotation with minimal friction. It
19 carries load or transfers load, the weight of the bus, the
20 cornering loads and so forth that have to be -- that have to
21 react between the bus and the road. And it positions
22 components that are attached to those. So in other words,
23 parts of your brake system are stationary. Parts of it are
24 rotating, and it's really the bearing that keeps that alignment
25 so that those parts can function.

1 MR. YOHE: Okay. Thank you. Could you just tell us
2 very briefly the major ways, methods, in which bearings are
3 lubricated?

4 MR. SKIPPER: Well, if we look at -- well, just in
5 general, almost always bearings require oil for lubrication,
6 but in the case such as heavy wheels, heavy automotive wheels,
7 that oil can be delivered in different forms. If it's a fluid,
8 then it is oil as, we would recognize it. But oil can also be
9 suspended in thickeners and you would call that a grease. But
10 the actual lubricating mechanism that is there to separate the
11 metal surfaces in operation is, is always oil. But those are
12 the two principal ways of lubricating wheel bearings.

13 MR. YOHE: And the, the method of lubrication in this
14 particular bus that we are talking about and this was
15 considered what? Oil bath or grease.

16 MR. SKIPPER: It's an oil bath system, oil bath in
17 the sense that there is a fixed volume of oil that is held
18 within the hub by seals and by the hubcap. It therefore forms
19 a bath of oil, yes.

20 MR. YOHE: Could you tell us what would be the, the
21 advantages and disadvantages of either type of lubrication
22 method? Would one, especially in buses or commercial vehicles
23 in general, would the oil bath or grease, grease bearing, one
24 of them have an advantage over the other?

25 MR. SKIPPER: An advantage may be in different ways,

1 singular ways, but in terms of an overall system, there's some
2 balancing out if you want. Oil is fluid. As I said, it tends
3 to move more easily. It therefore would move in and out of the
4 metal contacts, as the bearing is moving, perhaps more easily.
5 It would tend to move around in the hub more easily and perhaps
6 conduct heat away to, to the hub surfaces. I'm talking now of
7 the natural heat of a well functioning system. But oil has
8 perhaps, and my colleagues would I'm sure talk to this, oil has
9 perhaps more of a tendency -- it's harder to seal in. It's
10 hard to keep it in a system. It's -- the seals have got to
11 be -- it's more demanding on the seals. And grease then has
12 that advantage, that it is easier to seal into a system.

13 MR. YOHE: In an ideal situation, presuming you have
14 an oil bath system without any leaks in it, and you have -- and
15 then you have a grease system, could you get more miles out of
16 one bearing than the other, all other factors being equal?

17 MR. SKIPPER: Well, there's the key. All other
18 factors being equal. From a very selfish bearing point of
19 view, we would look at it and say the bearing needs to be
20 lubricated. And that means having something of a right grade,
21 that it's not contaminated, it's not degraded, it is present
22 and it's there in sufficient quantity. That meets our needs.

23 Assuming those conditions to be present and, of
24 course, in either system they might not be, but if they were
25 present, we would predict the same performance out of either

1 system.

2 MR. YOHE: Can you tell me just a, maybe give me a
3 range of miles that on a commercial vehicle you might like to
4 see get out of a particular bearing, I mean the bearing life,
5 like 100, 500, 1 million miles? Is there any, is there any
6 particular rule of thumb as to how many miles or -- miles an
7 operator can use a vehicle, you know, with a particular bearing
8 before that bearing's changed out?

9 MR. SKIPPER: No. We certainly use life prediction
10 in designing the system, which includes selecting the bearing
11 and Mr. Johnston talked to that. It's a matter of taking a
12 load rating on a bearing which is a number that basically
13 describes its, its load surfaces, and comparing that with the
14 actual loads predicted for that axle, and thereby coming up
15 with a predicted life.

16 But I would emphasize that that's a comparative
17 process, in the sense that the loads that I think Mr. Johnston
18 would use at ArvinMeritor are probably fairly standardized
19 ones, load cycles that they have long experience with, that
20 allows them on one axle compared on another, to say, well, this
21 will probably be a successful application. And the, the, the
22 performance of the product in terms of how long it lasts is
23 really in the eye of the beholder. It's the user, and a part
24 of that has probably got to do with how he maintains that
25 product and what he wants to put into it.

1 But just to summarize from my point of view, if a
2 bearing is operating in a good environment, and it's maintained
3 and periodically inspected, that bearing can run for very long
4 periods of time. I do not have a number.

5 MR. YOHE: Does the Timken Corporation, do you know
6 if they publish any literature or do you have -- do you get any
7 recommendations on oil bath bearings as far as how often the
8 lubrication level needs to be checked? Is that -- if that's
9 something that, that Timken as a manufacturer does.

10 MR. SKIPPER: We don't do that independently. Again,
11 and this might sound cruel, we have a very selfish view of
12 life. If the bearing can be treated properly and supported
13 properly is all we're really asking. So we, we have no
14 position to make really on maintenance practices because we're
15 simply saying maintain that condition for the bearing.

16 The subject then gets a deal more complicated when
17 you look at, well, how is a vehicle going to be used, what's
18 sort of environment will it be in, what sort of practices do
19 you have for the vehicle in total, preventative maintenance and
20 so forth. What tends to happen is that we will use our
21 knowledge and input that into working with perhaps the axle
22 builder or perhaps with industry associations to add our
23 expertise as it were, and those recommendations will come out
24 of those sources and we might tend to repeat those in our own
25 customer support literature, but we don't independently

1 generate those.

2 MR. YOHE: Okay. Mr. Skipper, as you know, and for
3 the sake of the attendees, you know, we called upon you for
4 technical assistance even though Timken was not actually a
5 party to the investigation. We did ask you to look at some of
6 the evidence, and is it correct that you saw some of the
7 deformed rollers?

8 MR. SKIPPER: That's right.

9 MR. YOHE: Now what, in your opinion, for those
10 rollers, especially like you -- everybody saw the one that was
11 up on the screen this morning that was out in the first grass
12 fire, the fire grass fire, that type -- that deformed roller,
13 for a roller to be deformed to that extent, what kind of
14 temperatures do you believe that we're talking about, just if
15 you have a professional guess you might say or assessment?

16 MR. SKIPPER: Well, we're talking of many hundreds of
17 degrees, I'd say probably in the range of 1,000 degrees F
18 anyway. But let's keep in mind, we're not talking of just
19 temperature to the point of thinking of the steel melting and
20 flowing which you might think as you look at some of those
21 photographs.

22 Rather what's happening is that as the steel of the
23 bearings heats, it loses strength but that bearing is still
24 sitting there under load. The bus is still bearing down on it.
25 So what you have a rolling action going in to the bearing

1 components, that is smearing and moving that metal and causing
2 the metal to flow.

3 MR. YOHE: Okay. Do you believe that, in this
4 particular incident, that the, that the rollers inside the
5 bearings could have gotten in that type of condition had there
6 been sufficient lubrication?

7 MR. SKIPPER: All the experience that I have points
8 to lubrication. Now we're looking at something that obviously
9 has gone to a very severe damaged condition here. So there are
10 things that we will never know about it, but looking at the
11 overall experience of the parts, it's, it's a lubrication
12 problem. And I would say if you look at the history of that
13 bus, that axle, those bearings, they have been operating I
14 believe in the order of 300,000 miles, and one assumes they've
15 been operating satisfactorily at least, you might even say
16 well.

17 Something changed. My guess is that it was the
18 lubrication that became inadequate in some form and probably
19 inadequate in the quantity that was there.

20 MR. YOHE: Okay. And so how -- and I would like to
21 ask this question first to you and then as a follow up, if
22 Mr. Johnston and Mr. Capstick. What are the ways in which an
23 oil bath bearing, you know, what are the ways in which it could
24 lose lubrication or the lubrication become so inadequate that
25 we have a build up of heat which led to what we're talking

1 about here today, the fire?

2 MR. SKIPPER: Well, remember we talked about it being
3 an oil bath. There's a fixed quantity or desired quantity of
4 oil in that hub. It is contained on the inside of the hub by a
5 rotating seal, a seal that rubs on the stationary spindle. And
6 on the outside, there is a hubcap that closes off the otherwise
7 open end of the hub. For the most likely scenario of the oil
8 being depleted in some manner, it would have had to have been
9 lost through one of those areas in my opinion. Or let's say
10 that's the most likely way, either through a seal
11 deteriorating, allowing the oil to escape on the inside or the
12 hubcap being compromised in some way that the gasket or a crack
13 or something that could have lost oil on the outside. That
14 might have been a gradual process in either event. That could
15 have been more sudden. We don't know.

16 MR. YOHE: Mr. Johnston, the same question.

17 MR. JOHNSTON: Pretty much the same answer. The only
18 thing else I would point to would be the degradation of the oil
19 itself, whether it was replaced with a material that was not a
20 lubricant, and that it evaporated or also leaked out of the
21 conditions that Mr. Skipper commented on.

22 MR. YOHE: Mr. Capstick, as to how this hub cavity
23 could have lost oil?

24 MR. CAPSTICK: Those are the only methods that I
25 believe are possible, either lack of oil volume through loss or

1 not being placed in there in the first place or lack of
2 lubricity on the oil that's actually in there.

3 MR. YOHE: Okay. Mr. Skipper, I just have a couple
4 of more questions. Is it true that every bearing has a
5 basically -- has a life, even if it's properly lubricated, that
6 it still has a life where at some point, you know, we're going
7 to start to get spalling and at some point that we have a
8 breakdown?

9 MR. SKIPPER: Yeah, that's a fair comment. In fact,
10 the process of predicting bearing life that we use in
11 calculating lives and therefore in selecting bearings for a
12 particular application, is with the assumption of the onset of
13 what we call rolling contact fatigue. We're talking about the
14 material itself at a microscopic level in the contacts of the
15 rollers with the races, long enough, hard enough, you will get
16 material degradation that starts as I say microscopic spalling,
17 cracking of that material that gradually spreads.

18 And, in fact, when we, when we get into the business
19 of predicting bearing life, it's on a statistical basis because
20 you can never tell what one bearing is going to do. And we
21 call the thing that people who work with us are familiar with,
22 we call it the L10 life, and that's the life that generally
23 we're focused on in calculation. It means the life at which 90
24 percent of the bearings will reach or exceed before the onset
25 of that fatigue.

1 But I would emphasize that that is a very slow demise
2 of the bearing, but it is almost inevitable. There are
3 theories that say there is an infinite life in some conditions
4 but generally predicted, you will have rolling contact fatigue.

5 MR. YOHE: So when this rolling contact fatigue
6 develops in the most serious manner, in the most serious ways,
7 in other words, we have serious spalling and spalling of the
8 bearing, is it possible that that bearing ever just breaks down
9 completely and starts deforming the cage or is there any
10 testing to show, you know, what happens?

11 MR. SKIPPER: Right. You -- yes. You're asking if
12 it could progress to an event like this. I'd say, no, unless
13 you got to a point that the bearing had ground itself almost to
14 nothing, and so compromised the lubricant into nothing but
15 paste, then possibly that would be so. But normally what would
16 happen is that we would be generating very small hard particles
17 of steel that would cause some wear in that bearing. And in,
18 one would hope reasonable maintenance circumstances, that's
19 very detectable.

20 MR. YOHE: Okay.

21 MR. SKIPPER: A finger into the hub will bring up oil
22 sparkling with, with metal debris.

23 MR. YOHE: Okay. One last question. Is it fair to
24 say then that the deformation of the rollers, the bearing
25 itself, in the Wilmer accident, at least the rollers you saw,

1 could only be caused, you know, by a lack of lubrication?

2 MR. SKIPPER: I hate to say only.

3 MR. YOHE: Okay.

4 MR. SKIPPER: I always -- as an engineer, it's a very
5 hard thing to do, but in experience, and I have been playing
6 with tapered roller bearings for 38 years now, this looks like
7 lubrication.

8 MR. YOHE: Okay. Thank you very much. Member
9 Higgins.

10 CHAIRWOMAN HIGGINS: We will now break for lunch. We
11 will come back here in one hour, and resume the questioning
12 where we have left off. Mr. Panagiotou, will you take over or
13 are there more questions?

14 MR. PANAGIOTOU: I will be handling the questioning
15 when we get back.

16 CHAIRWOMAN HIGGINS: Thank you.

17 (Whereupon, a luncheon recess was taken.)

18

19

20

21

22

23

24

25

A F T E R N O O N S E S S I O N

1 CHAIRWOMAN HIGGINS: If everybody can take their
2 places, we will begin or continue with the Panel from this
3 morning's hearing. Mr. Panagiotou, you may begin.

4 MR. PANAGIOTOU: Thank you.

5 CHAIRWOMAN HIGGINS: Mr. Yohe.

6 MR. YOHE: I would just -- I'd like to ask
7 Mr. Skipper one more question regarding pre-load of bearings.
8 Could you tell us what it is, basically how to do it, and what
9 the significance of a pre-load of a wheel bearing is?

10 MR. SKIPPER: Yeah. We're talking tapered roller
11 bearings, and I described earlier that basically they are
12 bearings that are angled. Think of them if you want, two
13 bearings in a wheel end as being like two sets of wedges. You
14 can move those wedges in and out, inner races within the outer
15 races, such that you can adjust the amount of play, end play in
16 the, in the pair of bearings. So the end result would be if
17 there is end play in there, you could move the wheel back and
18 forth, and we're talking a matter of, you know, a handful of
19 thousandths of an inch.

20 Pre-load is a negative end play. It means basically
21 you've tightened up on the adjusting nut and removed that
22 clearance, and then perhaps turned that nut a little bit
23 further and put a small amount of pre-load, squeeze if you
24 like, into those bearings. If you do that, you do get some
25 advantages. Within the bearing itself, you will better

1 optimize the number of rollers that are sharing the load. It
2 tends to be good for the brakes, good for the tires, good for
3 the steering, good for the ride. The difficulty is what is the
4 method that you are using to achieve that adjustment, and if it
5 is not a precise system, then the danger is you could put too
6 much pre-load into the wheel bearings, which is essentially
7 just putting an overload in, and that will tend to exacerbate
8 any condition that you have. It will tend for the bearings to
9 run hot and, and if the lubrication's not sufficient, then you
10 could burn bearings up.

11 Pre-load is a matter of a lot of debate in -- I
12 certainly know in the trucking industry. I'm less aware of it
13 in the buses. Because everybody has an opinion. And probably
14 the large majority of them are valid. The problem is you have
15 to put all of those things I've talked about into context
16 before you can really decide what it is that you're trying to
17 achieve.

18 MR. YOHE: Thank you. I think, well, just before we
19 continue with Joe, I just wanted to ask, give the, give the
20 witnesses a chance to see if they have anything else
21 significant. Mr. Capstick, any -- is there anything else about
22 the, the incident at Wilmer, anything about the condition of
23 the motorcoach that you felt is significant?

24 MR. CAPSTICK: I guess from my standpoint, I believe
25 that we covered the wheel ends in the entirety. I believe

1 there were other issues on maintenance that were not, other
2 issues that show that maintenance was not up to par on this
3 vehicle, one of them being that the front tires on the vehicle
4 were undersized, considerably undersized. They were 11R22.5
5 tires where the required weight -- the required tires for
6 proper weight ratings on that vehicle are 315R80s, and that
7 means that the front tires on the vehicle at the time were
8 roughly 30 percent overloaded. I'm not sure it has anything to
9 do with the fire, but it's certainly an indication of
10 maintenance practice.

11 MR. YOHE: Mr. Johnston, the same question, and we
12 went over the braking system, and would you -- do you have any
13 comments, any other comments about the condition of the
14 motorcoach particularly as it relates to the axle's braking
15 systems?

16 MR. JOHNSTON: I think the one point in the area, the
17 foundation brakes, that I did mention earlier, was that four of
18 the six rotors that we looked at were below the minimum
19 thickness that's specified on the part, as well as that are in
20 manuals that basically require that the rotors be replaced when
21 they get down to that worn condition which indicates most
22 likely that those were the original rotors that were on the
23 vehicle, and that that's just another indication I think of
24 what Mr. Capstick was mentioning about the maintenance
25 processes involved here.

1 Regarding the pads, I think I did mention that we did
2 have one pad that was -- or had evidence, had evidence, had
3 pieces of the pad missing on the left tag axle wheel end, but
4 in general, the brakes were in reasonable condition from the
5 conditions of the fire, of course. But that's about all I
6 would really want to add to that at this point.

7 MR. YOHE: Okay. I am -- that concludes my
8 questioning at this time.

9 MR. PANAGIOTOU: Good afternoon. I'd like to change
10 the direction of the conversation now to tire fires, and we'll
11 begin with a short video clip that Amerex provided us.

12 (Video clip played.)

13 MR. PANAGIOTOU: I'd like to start with Mr. Bevins.
14 Could you please give us a summary of what we just saw in
15 those -- in that brief vide clip?

16 MR. BEVINS: Sure. That was a, a controlled
17 laboratory test that was done in Norway at Sintef Labs in about
18 2001, along about that time, and the Scandinavians were having
19 a lot of problems with tire fires. They have very hilly
20 country, and they were getting a lot of truck tire fires due to
21 the brake overheats. So they solicited manufacturers of fire
22 extinguishers, actually from all over the world, to come and
23 try and put out these tire fires in a controlled laboratory
24 situation. And what they would do is they mounted a set of
25 actual truck tires in a dual wheel configuration, and ignited

1 them with an accelerant, let them burn for like 2 minutes, so
2 they got good and hot, and then apply various agents with
3 portable fire extinguishers to see if they could, in fact,
4 extinguish them.

5 I think what we saw there was a summary of two
6 different tests. The first one was a dry chemical fire
7 extinguisher, ABC type agent. The second test was a liquid
8 agent of a saponified foaming water nature, and it was hard to
9 see without the commentary on the video, but in both cases,
10 there was a reflash of the tire after the initial
11 extinguishment. It appeared to be out, but the, the internal
12 steel cord remains hot. You had a reflash, and then the third
13 scene was a -- they actually had to get a fire hose from the
14 building to put the tires out.

15 MR. PANAGIOTOU: We've heard from previous testimony
16 that tire fires are considered very difficult, if not
17 impossible, to extinguish. Can you elaborate on why that might
18 be the case?

19 MR. BEVINS: Well, there's quite a few reasons
20 actually. Rubber burns very hot and modern tires generally
21 have some sort of steel cord which retains heat. You've also
22 got the metal mass from the wheel itself, the axles and brakes
23 that all retain heat which tend to, if the metal is not cool,
24 even though you get the rubber or the tire extinguished, it can
25 cause a reflash, and also when a tire burns, it's quite likely

1 if the side wall has been compromised, the inside of the tire
2 can get fresh air, the tire is burning on the outside and on
3 the inside. Now you can apply an agent to suppress the fire on
4 the outside of the fire, and it may never reach the inside of
5 the tire.

6 Also, to get close enough for a person to really be
7 effective on a tire fire, he's got to wear some sort of
8 protective clothing because it's really hot, and all of the
9 heat is coming out of the wheel well towards you when you try
10 to do that. That gentleman in that test was wearing a
11 fireman's bunker coat, oxygen mask, face hood, gloves, all the
12 typical protective clothing that a professional fire fighter
13 would wear. A guy in street clothes would feel an extreme
14 amount of heat.

15 So that's some of the problems that you have, and
16 when you're looking at a dual tire situation, you just double
17 all of this -- all of those problems.

18 MR. PANAGIOTOU: Thank you. And as a result of those
19 tests, has there been any determination as to what type of fire
20 extinguisher is more effective for these tire fires?

21 MR. BEVINS: The success extinguishers in that
22 particular test were a, were a water mist extinguisher and an
23 enhanced liquid cooling agent extinguisher, applied with an
24 extinguisher that had a long extension wand so that the
25 operator could get back away from the fire and direct the

1 stream in -- where the fire was the hottest, where it was
2 needed most. Those were the two most successful.

3 MR. PANAGIOTOU: And so what is it that makes those
4 types of extinguishers more effective?

5 MR. BEVINS: Well, the ability to take heat out of
6 the hot surfaces, out of the metal, to actually -- they're
7 effective on extinguishing the rubber, but they also have the
8 ability to cool the surrounding metal which is -- helps prevent
9 a re-ignition. And also the ability of a extinguisher with an
10 extension wand on it to reach back and get the inside dual
11 where you wouldn't with just a regular hose with just a nozzle
12 on it.

13 MR. PANAGIOTOU: I see. Do these extinguishers also
14 work on ordinary combustibles?

15 MR. BEVINS: You've got three common classes of fire
16 excluding combustible metals. You've got A, which is common
17 combustibles like wood and paper, rubber. They're effective on
18 those. The second type would be a fuel type of fire, like
19 diesel fuel or hydraulic fuel. The -- they're less effective
20 on those but effective, and your type C fire is energized by
21 electricity. A liquid agent extinguisher is usually not
22 effective on an electrical type of fire.

23 MR. PANAGIOTOU: And who generally uses these
24 extinguishers that are meant for -- that perform well with tire
25 fires?

1 MR. BEVINS: That are made for a tire fire?

2 MR. PANAGIOTOU: Like the extinguishers we saw in the
3 video clips. Who generally purchases those? Who uses those?

4 MR. BEVINS: Those are commercial rated fire
5 extinguishers and you'll find those in factories. Fire trucks
6 are equipped with them many times. They're not your common
7 home use type of extinguisher. They're strictly a commercial
8 grade extinguisher.

9 MR. PANAGIOTOU: Could they be used aboard
10 motorcoaches?

11 MR. BEVINS: Yes.

12 MR. PANAGIOTOU: Stored aboard and --

13 MR. BEVINS: They could be, uh-huh.

14 MR. PANAGIOTOU: All right. Thank you very much.
15 I'd like to now talk to Mr. Queiser. I'd like to know if the
16 industry, the tire manufacturing industry, if they ever do any
17 studies to establish the cause and/or effects of potential tire
18 fires?

19 MR. QUEISER: Well, I can certainly speak from what
20 we know as a part of the tire industry. At least in the last
21 10 or 15 years, as far back as we can go, recent memory, recent
22 history, we're not aware of any surveys or studies that track
23 tire fires specifically. What we tend to know about it tends
24 to come to us often anecdotally. We are often at the end of
25 the chain of being informed, whether it's through the media or

1 a claimant of some kind, and that's maybe indicative of the
2 investigations that may occur prior to us becoming aware, in
3 essence determining the cause from some other source such as
4 the brakes or bearings or whatever it may be.

5 MR. PANAGIOTOU: I see. So from the tire industry's
6 perspective, is there much concern about these tire fires?

7 MR. QUEISER: Well, naturally we're concerned about
8 any safety matter associated with our product or the vehicle
9 that they go on and certainly the people that drive in or on
10 them. But for us we see this as a predominantly externally
11 driven issue. We're proximate, apparently, to the sources of
12 heat and we know that the tire can catch fire, but at this
13 point we don't have, because of the rarity of it, we don't have
14 a lot of information about it beyond essentially what we've
15 heard today.

16 MR. PANAGIOTOU: So then I guess it would be safe to
17 say that or actually I'd like to know, is there anything then
18 that's being done to mitigate the effects of fire on a tire or
19 to enhance the resistance? Has any study of the feasibility of
20 such practice or even if it's been applied at all?

21 MR. QUEISER: Well, I would say we tackle this really
22 on one front, and that is with what we recommend, how the
23 product is used, and I think that's in conjunction with what
24 the vehicles manufacturers or component manufacturers recommend
25 the use for their products. Certainly the situations involving

1 fire that we've heard of, involve maintenance practices or care
2 and service of the vehicles themselves. As far as the tire, we
3 provide -- along with the industry, we provide a significant
4 amount of good information about how to care for the tire so
5 that it itself doesn't generate anymore heat than it's intended
6 to for instance.

7 MR. PANAGIOTOU: Does the tire industry generally
8 collect statistics to be able to determine the frequency of
9 occurrence and possible causes for tire fires? Is there any
10 such program?

11 MR. QUEISER: Not that I'm aware of. No, not at all.

12 MR. PANAGIOTOU: Okay. So then I suppose you
13 wouldn't be able to give your opinion on the trend in numbers
14 of tire fires?

15 MR. QUEISER: That's right. I mean essentially
16 because of the low frequency of occurrence, that would be
17 right. There would be no statistical trend as far as we can
18 see.

19 MR. PANAGIOTOU: Thank you very much. Now I'd like
20 to change the topic slightly to motorcoach design and material
21 flammability, and I would like to begin with Mr. Capstick.

22 When you design a motorcoach, is any consideration
23 given to its ability to withstand the fire?

24 MR. CAPSTICK: Within the scope of materials
25 available and readily used in the automotive industry, I guess

1 I would have to say certainly some consideration, but it's not
2 the only consideration.

3 MR. PANAGIOTOU: How is that taken into
4 consideration?

5 MR. CAPSTICK: Well, we try and use materials that
6 are, are most suitable for certain aspects of the vehicle, and
7 one of the things that we would look at is whether or not the
8 materials are flammable. If the -- if a component is to be
9 used on the inside of a vehicle, we consider FMVSS 302, and we
10 try and make sure that all components on the inside of the
11 vehicle are certified to meet FMVSS 302, anything that's in the
12 passenger compartment.

13 MR. PANAGIOTOU: Is the exterior body paneling
14 designed to protect against an external fire?

15 MR. CAPSTICK: To some extent, yes, although exterior
16 body panels on buses have been made out of aluminum, steel or
17 fiberglass for many years, and we continue to use those types
18 of materials. Now both aluminum and fiberglass are combustible
19 materials within the range of things that you will find
20 involved in a tire fire.

21 MR. PANAGIOTOU: So is mitigating the effect of a
22 potential tire fire part of the design consideration in
23 selecting these materials?

24 MR. CAPSTICK: Well, in regards to a tire fire, we
25 provide an interior inner fender barrier between the tire area

1 and the passenger compartment. It's always made out of
2 stainless steel. The outside of the vehicle, the most
3 prominent path of the fire into the interior of the vehicle is
4 when the flames go up the outside and they go past the window,
5 superheat the windows and cause the windows to break at which
6 point the fire has a path inside the window.

7 MR. PANAGIOTOU: You mentioned the FMVSS 302 test.
8 Are there any other flammability requirements that MCI follows
9 when selecting materials for a motorcoach? Are there any other
10 applicable tests?

11 MR. CAPSTICK: There are no other standards that
12 apply to bus building other than FMVSS 302, although MCI does
13 try and make sure that not only the components that are on the
14 inside of the vehicle but the fiberglass, while we use
15 fiberglass on the exterior of the vehicle, it also complies
16 with the burn rate requirements of FMVSS 302.

17 MR. PANAGIOTOU: What materials exactly does that
18 standard apply to? You said interior?

19 MR. CAPSTICK: Okay. 302 applies to a very short
20 list of components in the interior of a vehicle. I'm not sure
21 I can give you the whole list, but it includes seat covers,
22 seat cushions, headliners, seatbelts, window -- windshield or
23 window shades. There's a half a dozen other components that
24 are specifically named in 302, but MCI has for years tried to
25 make sure that all of our, our interior components comply with,

1 the requirements of 302 even though they are not required to
2 by -- that 302 does not specifically apply to them.

3 MR. PANAGIOTOU: Okay. And could you repeat for us
4 again what types of materials are used in the exterior shell of
5 the vehicle?

6 MR. CAPSTICK: Well, components on the exterior of
7 the vehicle are made from numerous materials. They're steel,
8 stainless -- carbon steel, stainless steel, aluminum, glass
9 reinforced plastic resins, straight plastics, elastomerics,
10 rubbers, glass, the same types of industries -- materials that
11 you would find throughout the automotive industry.

12 MR. PANAGIOTOU: You said that even though it's not
13 required the materials used on the exterior of your buses are
14 tested to the 302 test. Why do you do that?

15 MR. CAPSTICK: We use the same fiberglass -- when we
16 come to a fiberglass part, we use the same fiberglass resins
17 that are on the outside of the vehicle that we use on the
18 inside of the vehicle. On the inside of the vehicle we want to
19 make sure that they comply with 302. So they therefore will
20 comply on the outside of the vehicle as well.

21 MR. PANAGIOTOU: I see. So could you summarize and
22 tell me how your vehicle protect against an external fire?
23 Like one originating from the wheel well for example.

24 MR. CAPSTICK: How it protects against fire? The,
25 the flames will not go through the interior -- into the

1 interior of the coach through the inner fender which is a
2 stainless steel material, but they certainly will as long as
3 there are glass windows, the flames will, as they boil up the
4 outside the vehicle will heat up the glass to the point where
5 eventually the glass will break and the flames will go inside.

6 MR. PANAGIOTOU: Thank you very much. I'd like to
7 now direct some questions to Mr. Roger Saul.

8 What flammability requirements exist for
9 motorcoaches?

10 MR. SAUL: Let me start by, in general, in general
11 our approach to fire safety is threefold. The first is to
12 prevent the fire initially, and we have field system integrity
13 requirements for that. There are none of those that would
14 apply typically to a motorcoach per se.

15 The next two provisions would be secondary to prevent
16 any highly combustible materials inside the interior
17 compartment, to protect the occupants and to insure that those
18 materials retard any fire that might come in contact with the
19 interior compartment, and then the third is the evacuation is
20 kind of a last step which we'll talk about on the next panel.

21 Particularly to motorcoaches then, the second and the
22 third one would apply to motorcoaches. So that would be the
23 flammability requirement that Mr. Capstick had mentioned.

24 MR. PANAGIOTOU: Is this flammability requirement the
25 same for all vehicles?

1 MR. SAUL: The flammability is the same requirement
2 for all motor vehicle compartments, yes.

3 MR. PANAGIOTOU: Does the occupant capacity or the
4 provisions for egress anyway affect the criteria of this
5 flammability standard?

6 MR. SAUL: No, the, the occupant requirements gets
7 into the third phase that I had mentioned which would be the
8 evacuation portions of it. The interior compartment, as I
9 noted, is really to insure that there's not highly combustible
10 materials in the interior compartment. So that's the same
11 regardless of what that compartment might be, the capacity, the
12 seating capacity of the vehicle.

13 MR. PANAGIOTOU: And so in general terms, what
14 protection does this standard provide?

15 MR. SAUL: It provides protection from any highly
16 combustible materials being part of the construction of the
17 vehicle occupant compartment. It provides a burn rate for the
18 materials, roughly 4 inches per minute for the propagations, so
19 that the flames would not propagate anymore quickly than that.

20 MR. PANAGIOTOU: When the materials are tested, are
21 they exposed to a large ignition source, a small ignition
22 source. Can you give us a brief, just a description of what
23 the test is?

24 MR. SAUL: The test in general is a small sample
25 that's placed in a U shape type of a holder, and it's exposed

1 to a Bunsen burner in a, in a small little oven or chamber that
2 prevents any drafts so that there's a controlled draft source,
3 and then the exposed flame to this material, the requirement is
4 that after it burns about an inch and a half, it can't
5 propagate from that point. That is the starting point, and
6 beyond that point, it can't propagate at a rate of more than
7 roughly four inches per minute.

8 MR. PANAGIOTOU: Now is this test representative of a
9 real fire scenario?

10 MR. SAUL: We have not seen any reason to think that
11 it's not representative of the types of fires that would come
12 into contact with the vehicle interior components that it's
13 intended to protect against.

14 MR. PANAGIOTOU: So you believe that this is an
15 adequate test?

16 MR. SAUL: It's adequate for what it's intended
17 purpose is, and that is for the occupant protection inside the
18 compartment space. If you're asking if it's representative of
19 exterior fires like tire fires that we're talking about today,
20 it would not be representative of that type of a fuel type of
21 a -- a fuel fed type of fire. I'm considering tires to be a
22 fuel fed fire as well as liquid fuels and that sort of thing.

23 MR. PANAGIOTOU: Okay. Does the toxicity of the
24 burning materials, the smoke that's coming off the burning
25 materials, does that come into play at all?

1 MR. SAUL: The toxicity of the smoke is not a
2 criteria of the requirement itself. It is important in the
3 work that we did during the 1990s, we did a couple of studies,
4 and the reasons that we have not pursued any changes to the
5 requirements of flammability are due to concerns that one would
6 have been the toxicity of the material, any materials that
7 would be incorporated. That was one of the concerns why we've
8 not pursued that. If the materials were coated, treated in
9 such a way that they had chemicals on them, it would create
10 increased toxicity. That's obviously a concern, but other
11 than -- but specifically to the requirements of the standard as
12 they exist, no, there's not a toxicity requirement incorporated
13 into it.

14 MR. PANAGIOTOU: Okay. Are there any plans for
15 updating or looking further into these flammability
16 requirements?

17 MR. SAUL: We have a systematic regulatory review
18 that we've had instituted for a number of years, and several
19 years ago, the cycle was set up. The flammability requirement
20 is one of the standards that's in the group that's being
21 evaluated this year, and we wait and see what kind of results
22 come from that. We look at technology and other advances,
23 other standards that are being developed or are developed
24 during that cycle since the last time we would have done a
25 review, and so, without prejudging what we might find from

1 that, you know, we'll probably like this year or next year be
2 in a position to look at that information and decide whether
3 there's anything -- any reason to upgrade, but at this stage,
4 we've not seen any indications based on current data that we
5 have that indicate there's any reason that the standards are
6 not effective as it's currently on the books.

7 MR. PANAGIOTOU: I think Mr. Capstick gave us the
8 answer to this earlier, but do the flammability standards apply
9 to any of the materials on the exterior of the vehicles?

10 MR. SAUL: No. The requirements are specifically for
11 the vehicle occupant compartment.

12 MR. PANAGIOTOU: And why is there this division
13 between interior and exterior materials as it pertains to
14 flammability?

15 MR. SAUL: Well, as I indicated, the -- sort of the
16 three stage approach to fire safety in general is to prevent
17 the fire initially and then the portion that the flammability
18 requirement applies to is the vehicle compartment to make sure
19 that there's not highly combustible materials inside the
20 occupant compartment when it's constructed, and that's not --
21 so you don't have occupants on the exterior of the bus and as
22 Mr. Capstick indicated, there's many other types of materials
23 that are on the exterior, flammability requirements for rubber
24 tires and those kinds of components would be much different if
25 you were trying to implement a standard, if it was even

1 feasible.

2 MR. PANAGIOTOU: Okay. Does NHTSA have any concern
3 with the performance of motorcoaches during fires?

4 MR. SAUL: Of course. Our -- we're always very
5 concerned about any type of a condition that can cause injury
6 or harm to occupants. We're very concerned about a tragic
7 event like this one, and we're certainly looking forward to
8 whatever answers might come out of this to see if there's
9 practical suggestions that might be something that we should
10 consider as a part of our regulatory review.

11 MR. PANAGIOTOU: Is NHTSA doing anything currently to
12 address these concerns?

13 MR. SAUL: As a part of the regulatory review that I
14 mentioned, yes, we have an ongoing review cycle that is in the
15 intermediate stages, and we should have that finished late this
16 fall.

17 MR. PANAGIOTOU: Aside from the flammability tests,
18 does NHTSA provide any guidance for the design of motorcoaches
19 with regard to protecting them against fire?

20 MR. SAUL: The establishment of Federal Motor Vehicle
21 Safety Standards is -- we operate under performance
22 requirements. So we establish performance requirements and
23 that allows the latitude of manufacturers so that the
24 motorcoach or any other type of a motor vehicle manufacturer,
25 the latitude to develop any innovative technologies, whatever

1 it might be, but we don't provide design guidance per se.

2 MR. PANAGIOTOU: Okay. Thank you very much. Now I'd
3 like to talk about fire detection and suppression systems. I'd
4 like to begin with Mr. Capstick.

5 You previous said that MCI since 1999 has begun to
6 offer suppression systems for their vehicles. Could you tell
7 us why that is?

8 MR. CAPSTICK: To try and offer customers the ability
9 to purchase the latest fire extinguishing system that's
10 available to protect their property and their passengers as
11 best possible.

12 MR. PANAGIOTOU: What protection do these fire
13 suppression systems provide?

14 MR. CAPSTICK: Well, there are no, there are no
15 nozzles in the tire compartment because the system is an ABC
16 type of extinguishing material which is shown in the video that
17 Amerex provided you earlier, is not extremely effective in
18 extinguishing a tire fire. What we have addresses -- has
19 nozzles in the engine compartment and is intended to extinguish
20 or use all of its powder to extinguish fires in the engine
21 compartment.

22 MR. PANAGIOTOU: How effective would you say these
23 systems are at extinguishing the fires in the engine
24 compartment?

25 MR. CAPSTICK: Well, I'm not sure I have a lot of

1 data to support it. I do know of at least one fire on a
2 natural gas vehicle that was extinguished with one of these.
3 Whether there are any vehicles where a fire started that was
4 not extinguished with one of these, I cannot answer.

5 MR. PANAGIOTOU: What was the process for selecting a
6 fire detection suppression system? Was there testing done or
7 something?

8 MR. CAPSTICK: We had a customer who requested that
9 we investigate whether or not we could do this. We then
10 approached Amerex to work with them to design an installation
11 that could be put into our coaches and offer it to the
12 customers. That we've done. As the market has -- after we
13 offered it, the market has increased and more and more vehicles
14 are being built with it although certainly not by any means all
15 of them.

16 MR. PANAGIOTOU: Could you give us a guess or an
17 estimate of how many of these systems have been installed or
18 the percentage maybe of new buses that get this option?

19 MR. CAPSTICK: It would be at best a wild guess. I
20 would think it's -- it's less than 25 percent but I'm not sure.

21 MR. PANAGIOTOU: Okay. Does MCI have a program to
22 follow up on fire incidents that involve their vehicles? Do
23 you ever check up on --

24 MR. CAPSTICK: Not, not that I'm aware of although
25 there might be and I would not be aware of it. I mean

1 engineering, it's not something we would be involved with.

2 MR. PANAGIOTOU: Okay. And feedback from such a
3 program would -- if it existed, would it make it to
4 engineering?

5 MR. CAPSTICK: Some, some incidents might make it
6 back to us, but certainly there would be lots that would not.

7 MR. PANAGIOTOU: Okay. You also mentioned that since
8 2005, you began offering a system for monitoring the tire
9 temperature and pressure. Could you tell us a little bit about
10 that and why that's being offered?

11 MR. CAPSTICK: Well, again, it's being offered to
12 provide information to the driver, the operator, that there is
13 something amiss, either tire pressure or tire temperatures with
14 the system and allowing him to make an informed decision how to
15 handle it. It tells him that there's a problem with a certain
16 tire. What he does after that is something that's beyond our
17 control.

18 MR. PANAGIOTOU: How do these systems work? How are
19 they intended to be used?

20 MR. CAPSTICK: The system works by providing a, a
21 communications sensor, transmitter, inside the wheel that goes
22 to a little radio receiver that's mounted beside the, the
23 wheel, that's not rotating, and goes to a central control unit,
24 which in the event there's a problem, lights up the telltale
25 that's in the dash area.

1 MR. PANAGIOTOU: So are these devices effective in
2 alerting the driver to a higher temperature condition on one of
3 the wheels?

4 MR. CAPSTICK: I believe so, although there's --
5 they're too new to have any significant amount of data, and I'm
6 not sure that we have any -- as a manufacturer, we have any
7 method of collecting data because incidents will not
8 necessarily be reported to us.

9 MR. PANAGIOTOU: Okay. Thank you. Now I'd like to
10 turn back to Mr. Bevins.

11 What type of fire suppression systems currently exist
12 for vehicles, and specifically buses and motorcoaches?

13 MR. BEVINS: Pretty much there's -- all -- there's
14 good ones and bad ones. Can we just talk about the goods ones?

15 MR. PANAGIOTOU: Yes.

16 MR. BEVINS: Okay. Of the ones that are actually
17 effective, they usually have some sort of automatic detection
18 what we in the industry refer to as a hazard area. These were
19 identified by a previous committee, the turbo, alternative,
20 auxiliary heater, battery compartments, and to that I would add
21 the new catalytic converters that are required by EPA as
22 particular traps for diesel engines. Those are fire hazards as
23 well.

24 You put heat sensors in those, of a fixed
25 temperature, normally of a fixed temperature variety, that are

1 set at a significant temperature level above the normal
2 operating temperature of that area, and then these are tied to
3 a control panel at the driver's area, and all of that wiring is
4 monitored to make sure that it's -- it has continuity under
5 power and working.

6 Then you have an agent cylinder or bottle that
7 contains some sort of suppression agent, a dry chemical.
8 There's gaseous agents that are used in some applications, and
9 in Europe, they're experimenting with water mist. In addition
10 to that, the driver would have a manual release button so that
11 if he detected a fire visually or saw smoke, he could discharge
12 the system by action of his own pulling, typically pulling a
13 safety pin and pressing a button.

14 The agent from the bottle is then dispensed through
15 fixed nozzles on the vehicle that are pre-aimed at these
16 hazards that have already been identified. So in a fire
17 scenario, one or more of the detection devices would detect a
18 fire, send a signal to the driver. The driver would be alerted
19 probably by an audible alarm and a red light, and then
20 discharge that agent through these fixed nozzles into the, into
21 all the hazard areas, and then the more effective systems also
22 take steps to, after a 15 second delay, shut off the bus engine
23 so that fuel isn't continually pumped to the fire.

24 MR. PANAGIOTOU: Is the objective of these systems to
25 extinguish the fire or simply to suppress it for a period of

1 time?

2 MR. BEVINS: Well, they're all called suppression
3 systems for a reason. Fires being of an uncontrollable nature,
4 you never know what's going to happen. We do put out a lot of
5 fires but they are called suppression systems, and their design
6 purpose is to suppress the fire to give the occupants of the
7 bus a reasonable amount of time to escape and hopefully to
8 delay or prevent a spread of a fire. But we do put out a lot
9 of fires.

10 MR. PANAGIOTOU: And typically what areas of the
11 vehicle do they protect? I think you mentioned it, but --

12 MR. BEVINS: Well, the engine area is primarily, is
13 primarily always protected, and it contains several hazards.
14 The turbocharger has been discussed on several occasions,
15 alternators. High pressure hydraulics are also considered
16 potential hazards. Electrical, like batteries, starter cables,
17 exhausts, auxiliary heaters, are typical hazards on a bus.

18 MR. PANAGIOTOU: And are those systems effective in
19 those areas?

20 MR. BEVINS: Usually they are.

21 MR. PANAGIOTOU: And how do you test them?

22 MR. BEVINS: Tested during service or tested during
23 the product development?

24 MR. PANAGIOTOU: Both.

25 MR. BEVINS: Underwriters Laboratory has standards

1 for fire suppression systems. Factory Mutual also has
2 standards, and you can use the standards for one or both, from
3 one or both of these agencies. Amerex tests through Factory
4 Mutual, and we use NFPA, National Fire Protection Association
5 code 17 for dry chemical systems. I'm not sure what the UL
6 standards are because we chose Factory Mutual as being more
7 advantageous in the automotive market.

8 The manufacturer of a system, hopefully once they've
9 obtained these listings they're called, publishes a set of test
10 standards to be used by the end user or servicing organization
11 to make sure that the systems are operational after the vehicle
12 goes into service, typically every 1,000 hours or six months.
13 And basically what that is, is you just check the integrity of
14 all the components, make sure everything is there like it was
15 installed, make sure that the agent cylinder is pressurized,
16 and then there's tests you can do on the thermostats to make
17 sure they're functioning. You're just simulating a fire
18 without actually starting a fire or discharging chemical.

19 MR. PANAGIOTOU: Could you give us an establish of
20 maybe how many of these systems have been installed?

21 MR. BEVINS: In my 13 years with Amerex, we've sold
22 over 30,000 agent cylinders. There may be more than one agent
23 cylinder on a system. There can be up to four, and in all
24 markets I'd say my company's probably sold in excess of 20,000
25 complete systems.

1 MR. PANAGIOTOU: Who generally uses these systems?

2 MR. BEVINS: The bus market -- the transit bus
3 market, the inner city transit bus market has been our single
4 biggest customer, followed by off road construction, the waste
5 management industry uses a lot of them, forestry and surface
6 mining, quarry work, things of that nature. Our biggest
7 customer is inner city transit buses.

8 MR. PANAGIOTOU: Do these types of systems have
9 international acceptance? Are they used internationally?

10 MR. BEVINS: They're, they're gaining it rapidly.
11 The problem with the U.S. company doing business in Europe is
12 it's convoluted, currency, exchange rates. Every country has a
13 different test criteria that you want to meet. In Europe, the
14 systems are in use over there, primarily manufactured in
15 Europe, to meet those -- the requirements of the individual
16 companies, but the concept of fire protection on buses is
17 pretty generally accepted worldwide now.

18 MR. PANAGIOTOU: Okay. When you were discussing the
19 areas of the vehicle that are protected, you -- the wheel wells
20 were not one of those. How come these suppression systems do
21 not apply to wheel wells?

22 MR. BEVINS: Well, let me give you a little
23 background. We've been trying to develop an effective tire
24 fire system for over 10 years. There's -- a wheel well is not
25 a real friendly place on a bus. There's all kinds of debris

1 being thrown around in there, mud, road tar. It's a nasty
2 environment.

3 Getting a fixed nozzle to survive there, to be
4 effective is a challenge, and also getting a heat monitoring
5 device of some sort to live in that type of environment is
6 really tough. We made a couple of attempts at it, one in the
7 Dallas area, rapid transit, oh, back in the mid nineties and in
8 New Jersey transit in the early nineties, and while we could --
9 we never could make, nor could anybody else, a system that
10 would survive in a wheel well. And then you've got the
11 problems of how do you put out a tire fire. They're very, very
12 hard to extinguish.

13 MR. PANAGIOTOU: So what would you assume would be
14 the result of installing one of the current systems in the
15 wheel well? Would there be any effect? Would it be worth
16 trying?

17 MR. BEVINS: Well, we have tried it and unfortunately
18 it met with more failure than it did success due to the, due to
19 the constant abuse of the components stuck in a wheel well.
20 The current thinking on tire fire protection, instead of
21 extinguishment, to prevent ignition, and that's, that's what,
22 that's what my company is working toward, is a heat monitoring
23 system that will give a prewarning to a driver in the event of
24 elevated heat in one or more wheel wells.

25 MR. PANAGIOTOU: So that's the future you anticipate

1 for tire fire suppression?

2 MR. BEVINS: Well, that's my crystal ball. I don't
3 know what my competitor's doing. If he's got anybody here, I
4 hope he's not listening, but that, that seems to be -- that
5 seems to be the current thinking, that we think will work. We
6 have most recently developed a small device, not like a
7 thermostat with moving parts, but like a thermal couple or a
8 resistance temperature device that's very small, could actually
9 go inside a brake drum, that would monitor heat and then send
10 that to a data logger in a control panel that would control the
11 fire suppression system, log this data, and then look for an
12 elevated temperature beyond what has been established as norm
13 for that vehicle, one tire versus all the other three or five,
14 and then sound an alert to a driver that, hey, you've got a hot
15 tire back here on the lower left, and he looks at it and says,
16 okay, I've got a hot tire.

17 But then when it reaches a threshold where failure is
18 imminent, bead failure or something like that, actually take
19 steps to shut the bus engine off and keep it off because it
20 does no good to keep running the vehicle.

21 There are also coolants that we could apply either
22 with a portable extinguisher that the driver could apply after
23 the vehicle has been stopped, before the tire ignites that
24 could be effective, that have been tested to pull heat out of
25 metals and rubber. There's some thinking that a fixed nozzle

1 system could also be used in either -- with this or as a
2 combination with an operator applied type of liquid agent.

3 MR. PANAGIOTOU: So you're gearing the approach
4 towards prevention instead of suppressing a fire once it's
5 broken out?

6 MR. BEVINS: Due to the fact of how extremely hard it
7 is and risky it is to fight a tire fire, our current line of
8 thinking is just not to let it happen in the first place.

9 MR. PANAGIOTOU: All right. Thank you very much. I
10 have no further questions.

11 CHAIRWOMAN HIGGINS: Thank you. We'll not go to the
12 parties, and why don't we start with MCI.

13 MR. MURPHY: Thank you. I just have two quick
14 questions.

15 Firstly, you talked about the specialized
16 extinguisher with the long nozzle with the cooling agent type
17 of fluids. Part of the question that was asked was could these
18 be used by the driver, but my question is, what type of special
19 training, there we watched the gentleman with the long wand, he
20 seemed to understand where he was applying the chemical and so
21 on. Is this something that would need to take place? And the
22 second part of that, how large a bottle in the experience would
23 be needed for a driver to do such a thing? Thank you.

24 MR. BEVINS: On an extinguisher, where you're
25 fighting an established tire fire, like we saw in the video, a

1 lot of training would probably be required. It's, it's a very
2 unpleasant place to be, close to a burning tire with an
3 extinguisher even with a long wand on it. The fellow in the
4 video was a trained firefighter. So he was a professional. On
5 a cooling type of bottle, where you're not dealing with a
6 burning tire, where you're dealing with a hot brake or a hot
7 bearing, quite a bit less training is required because you're
8 not dealing with the panic situation of a fire. So the two
9 concepts, one, if you're fighting a fire, a lot of training
10 required. If you've already been alerted by an instrument on
11 your dashboard that says you're right tag axle is hot, and your
12 bus has been stopped and you go back and you see some steam or
13 some indication of heat, you just start spraying it with that,
14 and you can tell it's getting cooler because it's like spraying
15 water on a hot iron or something like that.

16 MR. MURPHY: I'm sorry. I'm a little confused, and
17 please clarify it. My understanding was that the bottle with
18 the long wand was the special foam cooling type of a fluid, and
19 the way you just described it, it sounded like you were
20 speaking of two different things?

21 MR. BEVINS: No, I'm speaking about the same type of
22 extinguisher used in two different applications. One is -- the
23 first application is fighting a fire. That takes a lot of
24 training. You're still using the long wand on the other one,
25 but the second application, the one that we feel is probably

1 the most realistic, is use that same extinguisher with that
2 same agent to cool it before ignition.

3 CHAIRWOMAN HIGGINS: Any other questions, MCI?

4 MR. MURPHY: No, thank you. I'm done.

5 CHAIRWOMAN HIGGINS: Okay. Then can we go to
6 American Bus Association.

7 MR. LITTLER: Thank you. I have several questions
8 for Mr. Bevins.

9 A lot of discussion on the, you know, fire
10 suppression systems and, of course, installing them on a new
11 vehicle and pretty good understanding of how you, you're
12 looking at primarily engine compartment fires, but if someone
13 were to want to retrofit one of these systems into an existing
14 coach, can you give us a sense of the difficulties of that,
15 also the size limitations, the weights, and ultimately the
16 expenses?

17 MR. BEVINS: Help me if I forget something of those.

18 MR. LITTLER: Sure, I'll be happy to repeat.

19 MR. BEVINS: The retrofitting is, is done all the
20 time, either the upgrading of an existing system or putting a
21 system on a bus that doesn't have one. It takes two guys about
22 a day to put one on. You've got to mount, you've got to mount
23 an extinguisher bottle, run some hoses, flexible hoses back to
24 your hazard areas to attach fixed nozzles to. That's a nut and
25 bolt job.

1 Then there's wiring. You pull some power off the
2 vehicle battery, and you run it to a control panel, and you run
3 some wiring either along with other wiring that already exists
4 on a bus, and take that to the thermostats and plug in a
5 control panel. It's a lot easier now than it used to be
6 because now everything's color coded, plug and play. If you
7 can put a stereo in your car, you can probably put on a fire
8 suppression system. The cost was -- was that the next
9 question? Cost.

10 MR. LITTLER: Actually the placement of the systems,
11 such as the bottles, where do they normally fit within the
12 coach?

13 MR. BEVINS: In the case of, in the case of these MCI
14 buses, they have a, they have a luggage compartment in the bay.
15 That's an excellent place to put them. You can -- if you've
16 got an area in the passenger compartment itself behind the
17 driver, under a seat, those are good places. Some
18 manufacturers will drop a panel down out of an air conditioner
19 duct and stick them back up there, underneath the bus in a
20 cavity behind the axle. There's all kinds of places. The
21 bottle itself typically holds 25 pounds of powder, and it's
22 about 9 inches in diameter and 2 feet long. So when you've got
23 an area like that, that's the hardest thing to find a spot for,
24 is the bottle.

25 MR. LITTLER: Okay. And if I was to walk in and buy

1 the kit off the shelf from you, are there a range of different
2 types that you offer?

3 MR. BEVINS: The standard, the standard fire
4 suppression 25 pound system would probably run you in the
5 neighborhood of 1800 to \$2200, depending on options and things
6 of that nature.

7 MR. LITTLER: Thank you. And that's all the
8 questions that we have.

9 CHAIRWOMAN HIGGINS: Thank you. American Bus.

10 MR. LITTLER: We have no questions.

11 CHAIRWOMAN HIGGINS: Sunrise.

12 MR. SCHLOTT: Yes. I have a question for
13 Mr. Capstick.

14 There was a discussion in an earlier panel about
15 adding additional doors to buses. In designing the bus, did
16 MCI consider adding an additional door in the side or rear of
17 the passenger compartment? If so, why did MCI decide not to do
18 so?

19 MR. CAPSTICK: I don't believe that MCI ever
20 considered adding an escape door in the side of the passenger
21 compartment, at least not in recent history. I don't know -- I
22 can't say what happened 40 years ago. On the other hand, we
23 have put doors in vehicles. We build prisoner transportation
24 vehicles that we put doors in. So we have done so. I've never
25 heard of anybody ever requesting that we even consider putting

1 an escape door in a vehicle.

2 MR. SCHLOTT: No further questions.

3 CHAIRWOMAN HIGGINS: Thank you. Texas Department of
4 Public Safety.

5 CAPTAIN PALMER: No questions. Thank you.

6 CHAIRWOMAN HIGGINS: NHTSA?

7 MR. MEDFORD: I just have one question for
8 Mr. Bevins. This goes to the fire suppression system. You
9 mentioned that the recommended maintenance practice is an
10 inspection and testing of the metallic material for temperature
11 activation. If you would -- if you don't do those, I mean how
12 forgiving are these systems, or how sensitive are they to
13 maintenance? If you don't do the biannual maintenance safety
14 check, are you going to lose a lot of operation out of that
15 system? How sensitive is it to maintenance?

16 MR. BEVINS: Well, we don't design a failure mode
17 into them, to -- so that they take themselves out of service at
18 any predetermined point in time. It depends on the, you know,
19 the service of the vehicle. A piece of logging equipment sees
20 more severe service than a bus, and it depends. Maintenance is
21 just good practice on any type of mechanical device, on any
22 vehicle. Our maintenance requirements are based on the severity
23 of service. For off road equipment, we say every 1,000 hours
24 of machine time. On a transit bus, it's been our experience
25 over the last 10 years that once very six months will keep them

1 reliably in service.

2 Now I've seen systems on buses when I go out in the
3 field to do work that haven't been touched in two years, and
4 they're still working fine. Are those people lucky? I think
5 they were. The next bus in that line may be out of service.
6 So, you know, it's hard to say but they're designed, they're
7 designed to last beyond the life of the vehicle.

8 MR. MEDFORD: Okay. Thank you.

9 CHAIRWOMAN HIGGINS: FMCSA.

10 MS. McMURRAY: Thank you, Chairman Higgins. Yes, I
11 have several questions for this panel. Let me begin with
12 Mr. Skipper or Mr. Capstick, either one of you I think could
13 answer this question.

14 As we've come to understand the preliminary facts
15 surrounding this particular incident in Wilmer, could you
16 describe how it's possible for the wheel bearings to lock, drag
17 a tire to failure, and then once the tire and the wheel is
18 replaced, for the wheel to subsequently be able to travel
19 another 20 miles freely and without -- until the failure
20 occurred? Could you explain how that happened?

21 MR. SKIPPER: Let me try first, and maybe the others
22 can agree or disagree because it's something that we did talk
23 about when we were examining the parts up in Michigan last
24 November I think it was.

25 The scenario to me is that the bearing system began

1 to damage, you know, the rollers began to get metal to metal
2 contact, they were not tracking properly, they were tending to
3 skew, grabbing and letting go and so forth. But the bearing
4 probably kept rotating for a while. But then it was overcome
5 and it stopped rotating as a proper rolling anti-friction
6 bearing, and started sliding within the bearing and then
7 generating far more friction and far more heat, and I think at
8 some point in there, the bearing probably -- the equivalent
9 would be it welded. It just locked up. It froze up. And at
10 that point, the point started dragging.

11 Now when they changed that wheel, in the process, I
12 think, of jacking up the vehicle, taking the weight off of the
13 wheel, putting a new wheel on, centering the system, did it
14 free it up? Also, because of the time that the wheel was being
15 dragged, it was no longer generating friction within the
16 bearing. It wasn't rotating anymore because it was dragging
17 with the whole wheel. So it wasn't generating heat anymore.
18 So, you know, you had a changing environment up until the time
19 when that wheel got changed and, and in changing the wheel, I
20 think it's possible that you, you re-centered the system such
21 that it could rotate again.

22 It then drove off rotating for quite some distance,
23 and I think the sequence was that the vehicle was then stopped
24 by another driver because he saw the heat and, and at that
25 point I would say the vehicle -- the wheel was still rotating

1 because it was glowing hot from the rotational friction of all
2 the parts, primarily the external parts, now the brake parts,
3 and the vehicle stopped, and then when he headed over to the
4 side of the road finally was when it locked up again. So I
5 think it's the changing circumstances that allowed that
6 sequence.

7 MS. McMURRAY: Could you characterize this as a
8 fairly frequent event? Does this happen very often?

9 MR. SKIPPER: That sort of sequence, no.

10 MR. CAPSTICK: If I can add one more point. When the
11 vehicle was stopped to change the tire wheel assembly, the --
12 it would have been normal practice for the driver to have
13 applied the park brake. The tag axle on that vehicle had
14 spring brakes which would have tended to have the disc pads
15 grab and hold the rotor back in its, in its normal, natural
16 position. And that again would have brought the hub, if it had
17 started to cant prior to that, it would have brought it back to
18 center on the larger inner bearing which was the less destroyed
19 of the two bearings. That bearing was probably still operating
20 at the time the vehicle stopped the first time, although by the
21 time it stopped the second time, that bearing had also seized.

22 MS. McMURRAY: Okay. Thank you. Another question
23 about this. If the lubricant filler plug on the wheel hub is
24 damaged such that bearing lubricant leaks out, typically how
25 long will it be before the bearings fail?

1 MR. SKIPPER: We know from experience that bearings
2 can run an amazing amount of time with an amazingly small
3 amount of lubricant. We've been forced to look at that
4 unfortunately at different times, such that what you would tend
5 to have I think is the lubricant system begins to be
6 inadequate. You're losing the volume, but you're still going
7 to have oil splashing around in there, and reaching the bearing
8 components and keeping them going.

9 I think once you started that deterioration to when
10 we had the final event, could have been hundreds, even several
11 thousand miles. It is not a very sudden event. Just a small
12 amount of lubricant every now and again to the bearing will
13 keep it going amazingly.

14 MS. McMURRAY: Okay. Thank you. Mr. Capstick, you
15 said that the left rear tag hub showed evidence of long term
16 oil leaks. How common is this problem of oil leaks in this
17 situation?

18 MR. CAPSTICK: Well, I'm not sure I have an answer as
19 to how common it is. It is certainly not uncommon that oil
20 seals have been known to leak. It's strictly a maintenance
21 issue, and it is something that needs to be caught by an
22 inspection of the vehicle during regular maintenance intervals.

23 MS. McMURRAY: Let me ask a question about that.
24 Could this leak easily have been discovered without physically
25 getting underneath the bus?

1 MR. CAPSTICK: No, not without physically getting
2 underneath the bus.

3 MS. McMURRAY: This would have required the bus on a
4 ramp or a bus in a pit?

5 MR. CAPSTICK: That's correct.

6 MS. McMURRAY: I have also another question for
7 Mr. Johnston or Mr. Capstick. When you examined the condition
8 of the brakes and wheels on this motorcoach, you stated that
9 you observed a number of maintenance challenges to this
10 vehicle. Did you observe lubrication problems specifically in
11 any of the other axles on this bus?

12 MR. CAPSTICK: Well, I do know that the kingpins on
13 the front axles were found to be lacking lubricant. I do not
14 know whether the hubs on the front axle were lacking lubricant.
15 The problem is that definitely on the left-hand tag axle was
16 low in lubricant, the site glass had been burned out of the
17 hubcap. So probably some of the volatile components of the
18 lubricating oil that was in there had been driven off and, of
19 course, the fire department was spraying water on it from the
20 left-hand side, and some of the water may have gotten in
21 through the hole in the hubcap. So it's really unknown how
22 much lubricant would have been in the left-hand tag axle hub.
23 The front axle hubs, I don't know that we have any
24 indication of whether or not there was low levels in there or
25 not. I can't tell you that. I don't believe so, but --

1 MS. McMURRAY: Okay. Do any of the manufacturers --

2 MR. JOHNSTON: Madam.

3 MS. McMURRAY: Yes.

4 MR. JOHNSTON: I'd like to answer that as well if I
5 could. Regarding Mr. Capstick's comments on the knuckle on the
6 steering axle, we did find dimensional wear in the critical
7 knuckle bores that basically house the steering arms and rods.
8 Likewise, the drive axle, although we weren't able to measure
9 exactly how much oil was left in the axle, we calculated that
10 there was about a 9 pint loss or reduction of the amount of oil
11 in the drive axle at the time of the inspection in Texas.

12 MS. McMURRAY: Nine pint loss out of a total volume?

13 MR. JOHNSTON: Out of a total volume of approximately
14 35 pints.

15 MS. McMURRAY: For all the manufacturers on the
16 panel, I have a question about training. Do you offer any
17 training programs to help commercial bus companies understand
18 the proper inspection and maintenance protocols for properly
19 maintaining their vehicles or do you rely on the maintenance
20 manuals that you provide with the equipment?

21 MR. CAPSTICK: On behalf of Motorcoach, we do have a
22 training department that has, has that available. It's not a
23 free service, but it is something that is available to all of
24 our customers.

25 MR. JOHNSTON: ArvinMeritor has a field service

1 support team that one of their specialties and responsibilities
2 is to conduct training programs really for all of our
3 customers, whether they be bus, coach or highway tractor.
4 Likewise, we have material on the website and other information
5 available to anyone that gets into the system.

6 MS. McMURRAY: Okay. Thank you.

7 MR. SKIPPER: For Timken, it's a ditto to all of
8 that. We expect that our people out in the field regard that
9 as one of the functions, to help customers and train them in
10 proper use of products.

11 MS. McMURRAY: Okay. Thank you. This question now
12 is for Mr. Bevins.

13 Do you know of any fire suppression systems currently
14 installed in buses that have been activated during a real live
15 occurrence or any real bus fire. You've mentioned that there
16 were a number of tests that are undertaken to test the
17 effectiveness of these systems, but can you talk a little bit
18 about how often these are actually activated on the road? And
19 if they are activated on the road, at highway speeds, what's
20 the reaction? What happens during highway speed travel and the
21 activation of these fire suppression systems?

22 MR. BEVINS: Well, I probably don't know of the
23 majority of them. I don't hear of them quite as often as we'd
24 like to. Typically what happens is they go off, they put the
25 fire out, they replace some belts and hoses, and the bus is

1 back in service within a day or two. They recharge the system
2 and go on.

3 I have seen quite a few buses that had pretty severe
4 fires that were, that were saved in service. Every now and
5 then we get a call and somebody's real happy they only had
6 \$10,000 worth of damage to a coach. When they go off in
7 service, if they're out on the road, you get a big cloud of dry
8 chemical extinguishing agent comes out of the back of the bus,
9 a sizable cloud of it. Part of it's lost and hopefully enough
10 stays in the hazard area to do the job. I've never heard of,
11 I've never heard of adverse affects for -- from the system
12 going off in service, to other motorists or anything like that.

13 MS. McMURRAY: How about passengers within the
14 motorcoach?

15 MR. BEVINS: Usually the chemical doesn't get inside
16 the coach because there's no route of air through there. The
17 engine area is sealed from the passenger compartment. The ABC
18 dry chemical is considered by OSHA as a nuisance dust. It's
19 not pleasant. It's like being in a dust storm but it beats
20 being in a bus full of smoke I guess.

21 MS. McMURRAY: All right. My final question is for
22 Mr. Queiser.

23 One of, one of the panel members had mentioned that
24 the tires on this vehicle were the improper size for this
25 vehicle. I think it was a load range G tire when, in fact, the

1 recommended tire was a load range J tire. Could you explain a
2 little bit about the speed rating and load carrying
3 capabilities of tires that are on commercial motor vehicles,
4 and do you believe that these undersized tires had anything to
5 do with this particular incident?

6 MR. QUEISER: Well, do you really mean speed rating
7 or load rating? Speed and load are different things.

8 MS. McMURRAY: Load. Load please.

9 MR. QUEISER: Tires are dimensionally sized to carry
10 a certain load based upon an inflation pressure contained
11 within the air cavity, and the industry utilizes standards for
12 these sizes and load ranges as well, which essentially the
13 higher the load range, the more load you can carry, ultimately
14 at a higher pressure.

15 In this case, the subject vehicle had undersized and
16 under pressure tires applied to the front axle, and I believe
17 as Mr. Capstick said, that it would really be more indicative
18 of the service -- I'm sorry -- the maintenance to this vehicle,
19 the upkeep of the vehicle rather than having anything to do
20 with the fire. It's essentially imperative that any motor
21 vehicle have the proper size and inflation pressure tires so
22 that they can carry the load as intended, and as such, by not
23 having that on the front axle of the vehicle, it's indicative
24 of their maintenance practices.

25 MS. McMURRAY: Thank you to the Panel for those

1 answers. Thanks.

2 CHAIRWOMAN HIGGINS: Thank you. Now we'll turn to
3 the Board of Inquiry for questions. Mr. Chipkevich.

4 MR. CHIPKEVICH: Thank you. Just a few questions.
5 Mr. Queiser, what's the impact of the undersized tires that you
6 were just speaking of? Would that cause the tires to run hot
7 or warm?

8 MR. QUEISER: Yes, it does. Tires deflect as they go
9 through the contact patch, and as the rubber expands and
10 contracts in that contact patch, it actually creates a certain
11 amount of heat, and if the tire is over deflected, meaning it
12 has too much load upon it or not enough inflation pressure,
13 then that duty cycle with each rotation the tire has to endure,
14 more stress and strain than it's designed to, and that can
15 build up heat naturally and it can cause tire failure
16 ultimately. There are other factors associated with vehicle
17 handling, ride and handling naturally that are part of that as
18 well, part of the tire size and inflation pressure, but I think
19 the core of your question centers around durability and those
20 are the primary issues.

21 MR. CHIPKEVICH: Do you know if the back tires were
22 sized properly?

23 MR. QUEISER: Well, we -- I can answer that to a
24 certain extent. We know that the, the dual axle tires appeared
25 to be -- certainly appeared to be properly sized, and the left

1 side tag axle tire also appears to be proper, but we don't know
2 really much at all about the right-hand side tire that, that
3 was destroyed by the fire. We don't know if it was the proper
4 size. It was from the spare compartment which I think you have
5 to remember, we don't know if it was well worn or new or
6 anything in between. We don't know what the pressure was when
7 it was applied. We don't know what brand, what size or
8 anything frankly very much about it.

9 MR. CHIPKEVICH: What about the tire that was
10 removed, the first tire that was locked up? Was that the
11 proper size?

12 MR. QUEISER: Yes, I'm sorry, to interrupt. It was,
13 in fact, yes.

14 MR. CHIPKEVICH: Okay. Do you know what the auto
15 ignition temperature would be for a tire?

16 MR. QUEISER: Not specifically. There's not a,
17 there's not a whole lot of information available in the public
18 domain at all about auto ignition temperatures of whole tires.
19 The limited testing that we've conducted indicates that the
20 temperature would approach about 800 degrees Fahrenheit before
21 it would auto ignite. It's important to know that that
22 temperature far exceeds the temperature which the rubber itself
23 would maintain it's material properties, and what that means is
24 that if the tire is in service, and it's being subjected to an
25 increasing amount of heat, slowly or more steadily increasing,

1 that it's going to approach somewhere around 350 to 400 degrees
2 where the rubber begins to break down. It, it isn't
3 maintaining the material properties that are desired for
4 adhesion or strength or resistance to tearing, and if that heat
5 cycle continues and increases, then the tire will continually
6 accelerate towards some type of failure mode as long as that
7 continues.

8 MR. CHIPKEVICH: Is there any benefit to filling a
9 tire with nitrogen or some other inert gas as opposed to air?

10 MR. QUEISER: For the instant application, I'm not so
11 sure. We have -- there is the potential naturally that if the
12 tire was to have a sudden burst, or even I suppose if it was
13 gradual, that you are releasing a certain amount of high
14 pressure, high pressure air which contains oxygen naturally.
15 It's a good question as far as the fire issue is concerned that
16 I don't have a solid answer for.

17 MR. CHIPKEVICH: Do you know if any dealerships are
18 installing or -- installing new tires with nitrogen or if
19 anybody's using that on highway vehicles?

20 MR. QUEISER: There are, yes. The commercial
21 trucking industry as well as a bit fledgling in the passenger
22 and light truck area as well. The move towards nitrogen
23 inflation has something to do with the potential improvement in
24 air retention, although it is limited. You have to remember
25 that the air we breathe and the air that is filled in a tire is

1 still 80 percent nitrogen. And so the effects of some of these
2 issues with respect to permeation are of -- actually are of
3 much current debate.

4 MR. CHIPKEVICH: Thank you. Mr. Saul, just a couple
5 of quick questions. On the fire safety standards, do those
6 apply to seat coverings as well as to seat cushions?

7 MR. SAUL: Yes.

8 MR. CHIPKEVICH: Foam?

9 MR. SAUL: Yes.

10 MR. CHIPKEVICH: Okay. Thank you. That's all the
11 questions I have.

12 CHAIRWOMAN HIGGINS: Dr. Ellingstad?

13 DR. ELLINGSTAD: Well, first of all, I'd like to
14 follow up very quickly with Mr. Capstick on a couple of
15 questions Ms. McMurray asked about the sequence of activities
16 with respect to this bus and the initial lock up and then the
17 repair and then the subsequent lock up. Just to make, you
18 know, everything very clear, when the tire was changed, nothing
19 was done to change the axle or the bearing assembly. Is that
20 correct?

21 MR. CAPSTICK: I believe that's correct, yes.

22 DR. ELLINGSTAD: Okay. What evidence would there
23 have been to a mechanic doing that changing that there was an
24 axle bearing problem that wouldn't be fixed by changing the
25 tire?

1 MR. CAPSTICK: Can I ask you to go to slide number 3?
2 Okay. This is the spare tire, the tire that was in the spare
3 tire compartment afterwards. This is the tire that went flat
4 the first time. On there you can see the fingers pointing to
5 the flat, the blown out part of the tire or the worn out part
6 of the tire, eroded away part, but right beside that you can
7 see that there is a flat spot on the rim, has a cord height of
8 about 1 inch and a cord length of about 10 inches. That should
9 be an indication to anybody who saw it that that wheel was not
10 moving. The only way you can wear a flat spot on the bottom of
11 the tire or a wheel is if that wheel was skidding. When a
12 wheel is skidding, that is not a normal flat tire situation.
13 There is a problem, something that has caused that tire to lock
14 up.

15 DR. ELLINGSTAD: Okay. Thank you for clarifying
16 that. I'd like to, while I have you, follow up on your
17 smartire monitoring system, and talk about the issue of, of
18 preventing fires by detecting these conditions. Is the --
19 where is your sensor for temperature with the smartire
20 monitoring system?

21 MR. CAPSTICK: Well, it's on the inside of the wheel
22 at the smallest diameter of the wheel and the rim. It's inside
23 the rim, inside the tire.

24 DR. ELLINGSTAD: Okay. So that this is, in fact,
25 sensitive to the thermal conditions of the, of the wheel, the

1 axle, all of the metal that's turning there?

2 MR. CAPSTICK: Well, it's sensitive to the
3 temperature of the rim --

4 DR. ELLINGSTAD: Okay.

5 MR. CAPSTICK: -- of the wheel, which, of course, is
6 subjected to all the radiating heat from whatever's going on in
7 side it, both brakes and in this case bearing hub spindle
8 contact.

9 DR. ELLINGSTAD: Okay. What sort of, just so we have
10 a sense of the range of temperatures that we're dealing with
11 here, what, what sort of difference is there between the
12 temperatures that one would expect under reasonably severe
13 operating conditions and the ignition temperatures for, you
14 know, for rubber on a tire or other flammable materials in that
15 vicinity?

16 MR. CAPSTICK: Well, the temperature that would be
17 inside a wheel during normal operation would be, you know,
18 considerably variable depending on the type of service that
19 it's seeing, but it would probably be considerably below the --
20 as Brian said, the temperature that you see at around 350
21 degrees. The rubber starts to deteriorate. It is much -- most
22 likely that under most circumstances it would be considerably
23 below that. Not all circumstances. It could in some cases be
24 higher than that, but the real issue is that the system has a
25 chance to compare the temperature of tire -- one tire to all of

1 the other tires on the vehicle.

2 DR. ELLINGSTAD: And is that how the system is
3 designed to work, to examine all of your sensors?

4 MR. CAPSTICK: It does look at all of the sensors,
5 yes.

6 DR. ELLINGSTAD: Okay. So that system would provide
7 that kind of an advanced warning to essentially --

8 MR. CAPSTICK: I believe in this case that would have
9 provided the driver with an indication that he had a problem on
10 the right-hand tag axle.

11 DR. ELLINGSTAD: Okay. Mr. Bevins, you described
12 some -- something similar in terms of a system with I think a
13 thermal couple located somewhere. What, what are the
14 differences between the kind of a system that you have and the
15 system that Mr. Capstick described? Are they fundamentally the
16 same principal?

17 MR. BEVINS: In some ways, yes. The smart tire
18 system compares all readings from all tires that they're
19 installed on. Whether or not it would have been installed on
20 the spare, we don't know. With fixed sensors on the vehicle,
21 that would work in addition to smart tire, if a smart tire was
22 installed, and we would typically target brake shoe
23 temperature, axle end temperature, a temperature within a wheel
24 well. So the operating principal would be the same. The
25 sensor location would be different, inside the tire versus

1 outside the tire.

2 DR. ELLINGSTAD: Okay. Thank you. And finally, just
3 not to let the Federal Government off so easily, one question
4 for Mr. Saul to follow up on the, the flammability requirement.

5 I just wanted to make sure I'm correct in
6 understanding that the requirement that you described relates
7 to the resistance to sustaining combustion after ignition is
8 achieved. Is that, is that a fair characterization? You light
9 something with a Bunsen burner and then watch how the fire
10 progresses?

11 MR. SAUL: That's correct. Once it's ignited with
12 the Bunsen burner, the rate of propagation cannot exceed 4
13 inches per minute --

14 DR. ELLINGSTAD: Okay.

15 MR. SAUL: -- of that material in the fixture that
16 the sample is contained within.

17 DR. ELLINGSTAD: All right. So is it fair then to
18 assume that those standards would not apply to tolerance, to
19 very hot temperatures in the environment. It's just a matter
20 of the property of the material in terms of sustaining
21 combustion as opposed to its, its ignition ability.

22 MR. SAUL: Maybe I'm not understanding it.

23 DR. ELLINGSTAD: Well, what I'm getting at is, it's
24 an issue of how, how readily it sustains combustion once
25 ignited rather than its resistance to igniting in the first

1 place.

2 MR. SAUL: It really does both. If it -- I think
3 there are some materials that would not ignite or would shrink
4 upon exposure to the fire itself. So to that extent, it would
5 also have some measure of how easily it ignites, but that's not
6 a criteria of the standard itself.

7 DR. ELLINGSTAD: Okay. And finally am I correct also
8 in understanding that there are no requirements related to
9 toxicity of combustion byproducts in the standards?

10 MR. SAUL: Not in the standards, that's correct.

11 DR. ELLINGSTAD: Okay. Is that a deficiency?

12 MR. SAUL: I don't believe that would be a deficiency
13 what I've seen in the materials that's been presented and the
14 information presented today. In this particular case, it would
15 appear to me that it was more toxicity of the tire itself and
16 as the flames engulfed into the compartment but that would not
17 be -- I've not seen any indications that the material
18 properties within the compartment ignited or combusted in any
19 way or ignited, you know, early in the event at all.

20 DR. ELLINGSTAD: Okay. Thank you.

21 CHAIRWOMAN HIGGINS: Mr. Magladry.

22 MR. MAGLADRY: I just have kind of one small line of
23 questioning, but I think it's important. If I can assume that
24 the tire would self-ignite at 800 degrees or thereabouts, is
25 it -- does it make sense that even with the wheel bearing

1 seized that the rim of that tire -- the rim of the wheel can
2 generate to 800 degrees to self-ignite that tire? That's a
3 Capstick, Johnston, Skipper, Queiser question.

4 UNIDENTIFIED SPEAKER: I'll take first shot. On that
5 particular wheel, we looked and inspected the brake and the
6 wheel itself. The caliper was rubbing on the inside of the
7 wheel, and we had basically about a 2 inch wide area, if you
8 will, around the complete circumference of the inside diameter
9 of the wheel that was in immediate, in direct contact. It was
10 actually rubbing and grinding the steel wheel against the
11 ductile iron caliper casting. Clearly as the one witness was
12 mentioning, they saw glowing red sparks coming from the wheel
13 end. That definitely would be a source of the sparks, would be
14 the caliper rubbing against the wheel itself, and those
15 temperatures would have, in my opinion, easily have gone to the
16 800 to 1,000 degree Fahrenheit level.

17 MR. CAPSTICK: And typically, the rough rule of thumb
18 is that steel becomes glowing red at 1500 degrees.

19 MR. MAGLADRY: The thought process I had was, of
20 course, are we going to create those kinds of temperatures to
21 self-ignite at the edge of the -- where the tire -- where the
22 rubber meets the steel of the rim, and I think you just
23 answered that.

24 The second related question I think is does the tire
25 need to have been flat and have touched another part of the

1 axle to have ignited itself or can we stick with the idea that
2 it can self-ignite just by the interaction between the wheel on
3 the brake?

4 MR. CAPSTICK: I believe that it's -- certainly when
5 the tire blows, for lack of a better term, and pieces go
6 flying, that -- and bits drag all over the place because of the
7 tire cords that are there, it's quite feasible to believe that
8 pieces of rubber did come in contact with the hub inside the
9 rim. I'm not sure it's as feasible to believe that the rim of
10 the tire at the bead seat area actually got to the self-
11 ignition temperature, but I don't know that I could rule it out
12 as well.

13 MR. MAGLADRY: And the last related question is, what
14 kind of temperatures are generated, if you know, simply by
15 erasing the tire on the roadway prior to its blowout? As it
16 was dragged along the road, it was erasing itself.

17 MR. QUEISER: Well, you're referring to the second,
18 to the second blowout --

19 MR. MAGLADRY: Yes.

20 MR. QUEISER: -- prior to the fire.

21 MR. MAGLADRY: Yes.

22 MR. QUEISER: It may be important to understand that
23 the contention is that, at least in my opinion, that the tire
24 lost air most likely just after the good Samaritan stopped the
25 vehicle and advised the driver of the glowing axle, and the

1 driver decided to make his way towards the side of the road and
2 after several hundred feet is when the skid mark appears, and
3 then that skid mark continues for, excuse me for not having the
4 exact number, but something like 1500 more feet roughly. At
5 that point, the tire was -- in a flat condition, everything is
6 now compressed between the wheel and the road and clearly more
7 proximate to the wheel and the hub. Everything is now real
8 close together, and the wheel dragged and created a flat spot
9 on the wheel, and that's evidence of that. And my examination
10 of the skid mark towards the very end of the bus' travel,
11 indicates a very softened appearance of a rubber that was very
12 spongy and soft for lack of a better term.

13 What the temperature of that rubber was at, I don't,
14 I don't know. I'm sure it was very -- obviously very hot,
15 and -- but I think that's the core of how things came close
16 enough together to heat the tire to create the fire.

17 MR. MAGLADRY: Mr. Capstick, did you have another
18 comment?

19 MR. CAPSTICK: No, I don't think there's anything I
20 could add to that.

21 MR. MAGLADRY: Mr. Skipper, would you like to
22 comment?

23 MR. SKIPPER: No.

24 MR. MAGLADRY: Thank you, gentlemen. That's all I
25 have.

1 CHAIRWOMAN HIGGINS: Ms. McMurtry.

2 MS. McMURTRY: Yes, I have two questions.

3 Mr. Bevins, you mentioned the cost of a suppression
4 retrofitting system for buses. What is the approximate cost of
5 the brand new system that would be spec'd in a bus?

6 MR. BEVINS: It's right about the same.

7 MS. McMURTRY: Okay.

8 MR. BEVINS: Your labor is, is going to be about the
9 same, a little bit more on a retrofit than when it's installed
10 on a new bus as it comes down the line, but not much.

11 MS. McMURTRY: So these systems are relatively
12 inexpensive considering a \$400,000 bus.

13 MR. BEVINS: Yes, compared to the price of the
14 vehicle, yes.

15 MS. McMURTRY: Okay. And I have a question probably
16 for Mr. Queiser. Is there a retardant that can be added to the
17 composition of rubber that would not change its performance
18 that makes it desirable to be made into a tire?

19 MR. QUEISER: I can't say that I know of one. Tire
20 technology continually evolves, but I'm not aware of a
21 substance that would be a fire retardant substance I guess is
22 what you're really asking. I'm just sorry. I'm not aware of
23 any.

24 MS. McMURTRY: Okay. That's all.

25 CHAIRWOMAN HIGGINS: I have a few questions. I guess

1 this is a question for both MCI and for Bridgestone/Firestone,
2 maybe any of the manufacturers. It strikes me that what we're
3 hearing today is that we don't have good data on the number of
4 fires and how often they occur and when they occur. We have
5 some data but it's not complete.

6 I'm interested from the standpoint of manufacturers
7 of products, either the buses themselves or the components that
8 go into these buses, as to what kind of information system or
9 feedback system you have about -- from your customers or other
10 sources about what happens to these products? I would think
11 that it would be important to know about incidents like this so
12 that you could do your own testing, do your own evaluation.
13 And I'm curious as to what systems you have in place.

14 MR. CAPSTICK: I guess I'll start this one. MCI
15 certainly has a warranty system whereby our customers who have
16 issues that occur during the warranty period of a vehicle will
17 report that through the system to make a warranty claim, but
18 after the warranty period on a vehicle, there is no formal way
19 for them to make a, a report on an issue to us unless they feel
20 strongly enough to write a letter or to call someone or bring
21 it up through the MCI owners council group, which, of course,
22 kind of tags all of the issues that all of the owners have
23 together and brings up only the main ones that are brought up
24 repeatedly I guess.

25 CHAIRWOMAN HIGGINS: Okay.

1 MR. CAPSTICK: But there's nothing that would
2 normally channel an issue of an old vehicle that is 8 or 10
3 years old and suffers a fire that would normally bring it to
4 our attention, other than if we happen to catch it.

5 CHAIRWOMAN HIGGINS: Okay. Thank you. Anyone else?

6 MR. JOHNSTON: Yes, ma'am. ArvinMeritor has a
7 dedicated resource to do a warranty tracking system very
8 similar to what MCI was discussing and referring to. Each of
9 our products has a fault tree analysis that the people that are
10 answering the warranty calls use to evaluate and code and
11 basically enter into a database this information by product
12 that we can search and review really monthly, weekly, daily if
13 necessary, depending on the particular interest. But again,
14 that ends at the end of the typical warranty period. Regarding
15 field complaints, customer complaints, even some of our
16 production deviations that we get into, we have what we call
17 the product safety and compliance committee, which really was
18 driven from the TREAD Act here recently that basically all
19 reports are taken into the committee. We do a fairly thorough
20 8-D analysis of the particular problems, do testing, do
21 additional search with the customer or within the industry to
22 validate some of the concerns that are coming in through this
23 P.S.A.C. process, and then we take field action on those
24 accordingly based on the findings and results of the 8-D
25 analysis.

1 It's not perfect. I'm sure we don't get every single
2 field complaint documented and put into the system, but we are
3 very diligently using that process and reviewing it on a
4 bimonthly basis for tracking and improving upon field issues
5 and complaints.

6 CHAIRWOMAN HIGGINS: Okay. Thank you. Mr. Johnston,
7 Mr. Queiser. I'm sorry. Mr. Skipper, Mr. Queiser.

8 MR. QUEISER: Well, I would -- what I would say would
9 be very similar to what you just heard from Mr. Capstick and
10 Mr. Johnston. We naturally also have a warranty, and we
11 monitor any consumer -- any consumer complaints. We kind of
12 consider that the pulse of the product performance in the
13 field. We also monitor claims or any other information that
14 may come to us from our customers to determine whether there's
15 any kind of safety issue or product issue that we can address.

16 I think you can naturally imagine that our company
17 works very closely with our fleet customers in the trucking
18 industry and in the busing industry. Many of our tires are
19 actually leased to those entities and returned to us when
20 they're, when they're done being used. We employ field service
21 representatives around the country to meet with our customers,
22 to be local, to be in their area and handle any issues that
23 they may have on a firsthand basis. So we've got a lot of
24 feelers out into the field but it is important to note that
25 we're only as good as the information we get.

1 CHAIRWOMAN HIGGINS: I appreciate that. I think you
2 said both there's no data collected by industry but there's
3 also a low frequency of tire fires. I'm wondering if we don't
4 have any data, how do we know that there's a low frequency?

5 MR. QUEISER: We've heard of them but we're not -- we
6 don't have a track -- the industry doesn't have a study, a
7 survey, any data compiled over time that I can give you
8 statistics or numbers.

9 CHAIRWOMAN HIGGINS: Okay.

10 MR. QUEISER: But we have -- we know they happen. We
11 have heard of them, but it's predominantly anecdotal.

12 CHAIRWOMAN HIGGINS: And then I have a question for
13 Mr. Bevins on the tire, on the suppression system. How much
14 experience do we have with the -- this system for, and maybe
15 I'm confusing the suppression system for engines with the tire,
16 the tire system that you mentioned. Are those systems, have
17 they been pretty well established? Do we have a lot of
18 experience with them?

19 MR. BEVINS: The engine -- we've got more experience
20 with the engine type of system --

21 CHAIRWOMAN HIGGINS: Okay.

22 MR. BEVINS: -- because engine fires, engine area
23 fires were much more common than tire fires. However, because
24 of the severity of tire fires, they get a lot of attention even
25 though there's not very many of them. Usually when one

1 happens, it's a total loss of a bus.

2 We started getting inquiries about tire protection
3 systems about 1995, and started working on them about that
4 time, again with the philosophy that we're going to put the
5 tire out once it catches on fire. The philosophy of trying to
6 prevent ignition is a relatively new thing over the past say
7 year.

8 CHAIRWOMAN HIGGINS: So just the last years, we don't
9 have a lot of experience with that system?

10 MR. BEVINS: Well, we know what not to do.

11 CHAIRWOMAN HIGGINS: That's important.

12 MR. BEVINS: Yes. We know not to let the tire get on
13 fire if we can help it, and we know not to try to put it out
14 because that's -- with a fixed system that usually is going to
15 fail.

16 CHAIRWOMAN HIGGINS: And is the retrofit that you
17 were talking about applicable to both the engine suppression
18 system and the tire system?

19 MR. BEVINS: Yes, it would be.

20 CHAIRWOMAN HIGGINS: And does it matter the age of
21 the bus or are these systems adaptable for any --

22 MR. BEVINS: Age really isn't a factor in it at all.

23 CHAIRWOMAN HIGGINS: Okay. That's helpful. And for
24 NHTSA, Mr. Saul, you talked about the three part system that
25 NHTSA employs in this area, and you mentioned system integrity,

1 interior materials and then evacuation. And with system
2 integrity, the goal is to prevent the fire initially. And I'm
3 interested in the fact that when I think of NHTSA, I think of
4 crashworthiness tests, and your determination of the
5 crashworthiness of vehicles. So I'm interested in the area of
6 bus fires as to whether you've done fire worthiness testing
7 other than with the Bunsen burner to determine the fire
8 worthiness of vehicles and the survivability of those vehicle
9 fires.

10 MR. SAUL: We have done a fair amount of testing
11 during the 1990s, not specifically to motorcoaches but
12 primarily motor vehicles in general. Most of that work was not
13 necessarily looking at fuel fed type of fires. A large part of
14 that was fires under the hood and the propagation of the fire
15 into the occupant compartment, once the fire would be
16 initiated, and I think I alluded to a part of that, why we have
17 not pursued that subsequent to the two studies that we have
18 done, and largely out of three concerns.

19 The first concern was a concern about the adverse
20 toxicity effects that any materials that would be applied to
21 the interior compartment might have if they were to burn. The
22 second concern is more to the crashworthiness characteristics
23 and how it would change the material properties within the
24 occupant compartment, whether that's airbag, panel covers in
25 deployability or the stiffness of the interior components for

1 the occupant interaction, and then the third area is just not
2 pursued because of the concerns about the need to maintain
3 those types of systems. Some of the testimony that you've
4 heard today about the tough environments, that some of those
5 would be subjected to. Now that may have changed in the last
6 few years since we've done our tests, but based on some of the
7 testimony regarding engine compartments and that sort of thing,
8 but certainly not with wheel well it would sound.

9 CHAIRWOMAN HIGGINS: But is it -- am I hearing you
10 correctly, that the standards are uniform for passenger
11 vehicle, passenger cars as well as across the board for
12 motorcoaches?

13 MR. SAUL: The standards as they apply to the
14 interior compartment and then the materials within the interior
15 compartment are uniform, yes, across all passenger vehicles.

16 CHAIRWOMAN HIGGINS: And what about exterior
17 materials?

18 MR. SAUL: We have no requirements for flammability
19 of exterior materials.

20 CHAIRWOMAN HIGGINS: But I believe NHTSA's
21 crashworthiness standards do go to exterior materials and
22 construction.

23 MR. SAUL: We don't go to design specifications at
24 all. Our crashworthiness standards that you reference as well
25 as our crash avoidance requirements are all performance

1 requirements. We do not specify design characteristics
2 typically.

3 CHAIRWOMAN HIGGINS: Are there performance
4 requirements for motorcoaches other than interior standards?

5 MR. SAUL: Yes, there's many. Many requirements
6 would apply. A large number of those would be crash avoidance
7 type things. Certainly brakes, tire requirements, those sorts
8 of things. Part of the testimony spoke to vehicles that have
9 natural gas conversions. Those would be applicable to our
10 standards that require -- are specified, and that would be a
11 fuel system integrity type of requirement.

12 CHAIRWOMAN HIGGINS: Just -- it's interesting to me
13 that a passenger car which has a minimum, two doors and often
14 many more than two doors or vans that have many more ways of
15 getting out than what we heard today about motorcoaches and who
16 are carrying many more people. It just strikes me as -- I
17 guess I'm concerned by the fact that there's essentially the
18 same standard regardless of the size of the vehicle or the
19 purpose of the vehicle and the number of people it carries.

20 MR. SAUL: I suspect that we'll be a segue into the
21 next panel, but the emergency evacuation or the emergency exits
22 are very dependent upon the occupancy, and I'm sure we'll get
23 into that in the next, but there are -- I believe the
24 information that I've read on this particular case, there were
25 I believe 12 emergency exits. Each one of the windows is an

1 emergency exit.

2 CHAIRWOMAN HIGGINS: Is that a NHTSA specification?

3 MR. SAUL: We have a standard four emergency exits,
4 and yes, for buses or motorcoaches, the number of exits and the
5 surface area that is required and the number of exits are
6 specified in that standards.

7 CHAIRWOMAN HIGGINS: Okay. And one more question for
8 NHTSA. The fire suppression systems we've heard about, have
9 you issued standards for those? Are you looking at those?

10 MR. SAUL: We have not issued any standards for
11 suppression. As I indicated from the studies that we had done
12 in the nineties, out of concerns about their effectiveness if
13 they're not properly maintained and the environments that some
14 of those would be subjected to and, and in the studies that we
15 have seen, we really have not seen a need in most cases where
16 it would propagate into the occupant compartment from an engine
17 compartment for example.

18 CHAIRWOMAN HIGGINS: Okay. We've talked about the
19 temperature at which fires -- I mean the tires start, 800
20 degrees, but if we went back to the diagram in Mr. Van Etten's
21 presentation, it showed the way this fire propagated and the
22 proximity of the tire and the tire structure to the floor of
23 the bus, to the fuel lines, to the exterior of the bus.

24 Is it -- was it a question of the tire being 800
25 degrees and catching everything else on fire or could those

1 sparks from that locked wheel rim and tire have ignited other
2 parts of the bus.

3 MR. SAUL: Is that a question for me, for NHTSA or --

4 CHAIRWOMAN HIGGINS: Anybody on the Panel.

5 MR. SAUL: I can only give my opinion. My, my
6 opinion would be that once the tire started fire, that's a
7 fueled fire, and it would ignite other surfaces in proximity
8 and engulf. I think some of the testimony, the flames would go
9 up to the windows and break the windows at some point but I'm
10 sure there's others on the panel that would be able to address
11 that better than I.

12 MR. BEVINS: May I respond, ma'am?

13 CHAIRWOMAN HIGGINS: Yes.

14 MR. BEVINS: I've done some fire investigations and
15 one -- you have to have three elements in a fire. You have to
16 have heat, oxygen and a fuel source. While you had plenty of
17 heat in that, in that wheel well with the locked bearing and
18 the dragging rim and a lot of sparks flying around, probably
19 the only fuel source in that area would have been the tire or
20 maybe some residual grease, oils down in there. So it would be
21 my educated guess that the tire was the culprit. It ignited
22 and then the fire spread upward on the outside of the coach.

23 CHAIRWOMAN HIGGINS: Any other comments?

24 Mr. Magladry has one more question and Mr. Chipkevich.

25 MR. CHIPKEVICH: Thank you. I just have one question

1 for Mr. Skipper. I wonder if you could help me with
2 understanding, what temperature do you estimate would be
3 necessary to fuse or to weld the bearing rollers together like
4 we saw from this event?

5 MR. SKIPPER: I honestly don't have a number for you.
6 We're looking at probably in the order of at least 1,000
7 degrees.

8 MR. CHIPKEVICH: Okay. Thank you.

9 CHAIRWOMAN HIGGINS: Are there any other questions
10 from the parties?

11 (No response.)

12 CHAIRWOMAN HIGGINS: Anything -- any other comments
13 from the Panel?

14 (No response.)

15 CHAIRWOMAN HIGGINS: Thank you. You've been very
16 helpful, and we will now take a break, and move to our fourth
17 and last panel for today. Please be back in 10 minutes. We'll
18 start promptly at --

19 (Off the record.)

20 (On the record.)

21 MR. MURPHY: -- and deal with potential recall issues
22 that may involve our vehicles. From time to time, if an
23 incident has been brought to our attention, I'm to liaise with
24 the NTSB and incidents that may come up and communicate with
25 the organization. I may from time to time work with the legal

1 department on issues that arise, and if there are incidents
2 that are brought to our attention, I may direct investigations
3 involving our product.

4 MS. McMURTRY: Okay. Thank you. Mr. Hotard, could
5 you for the record give us your full name, title, company and
6 business address?

7 MR. HOTARD: My name is Louis Hotard. I'm Director
8 of Tech Services for ABC Companies. We're located at 17469
9 West Colonial Drive, Winter Garden, Florida, and I'm here on
10 behalf of Van Hool who couldn't send anybody right now due to
11 European vacation and part of my responsibility as a Tech
12 Service Director, I act as a liaison between our customers, our
13 vendors, our manufacturer and I also help Van Hool edit their
14 service bulletins for U.S. publications, and also manage
15 communications with several agencies, namely CVSA, NHTSA, NTSB
16 and also state agencies, as items require vehicle compliance
17 issues related to vehicle compliance.

18 MS. McMURTRY: And how long have you done that?

19 MR. HOTARD: Ten years.

20 MS. McMURTRY: Thank you. Mr. Ford, could you --
21 same thing.

22 MR. FORD: Yes. My name is Paul Ford. I'm with the
23 Delaware Transit Corporation. My office is located at
24 Wilmington, Delaware, 119 Beech Street, in Wilmington. I've
25 been with the company for 14 years. I'm the Assistant Safety

1 and Security Manager, and as such, I assist the Safety Manager
2 in overseeing the entire safety of the corporation, both
3 industrial as well as transportation and also security issues.

4 MS. McMURTRY: Okay. Thank you. Mr. Knot.

5 MR. KNOTE: My name is Danny Knot. I'm with the
6 Federal Railroad Administration. I've been in the passenger
7 transportation business for 40 years. The last nine years I've
8 been with the Federal Railroad Administration. I'm currently a
9 specialist for passenger train system safety and emergency
10 preparedness. I also conduct fire safety audits as part of our
11 regulation that we have. My office is Sayville, Long Island.

12 MS. McMURTRY: Okay. Thank you. And, Mr. Mao.

13 MR. MAO: My name is Yowa David Mao (ph.). I go by
14 middle name, David. I'm a mechanical engineer with the Federal
15 Railroad Administration, and my duties, enforce the safety
16 regulations under motion power and equipment arena. Fire
17 safety is one of them. Also I participate in the rule making.
18 Thank you.

19 MS. McMURTRY: Okay. Thank you. Member Higgins, the
20 Panel is sworn and qualified, and Mr. Kaminski and Ms. Beckjord
21 begin your questions.

22 MR. KAMINSKI: Thank you. This discussion this Panel
23 will examine why U.S. motorcoach standards do not require
24 emergency exit doors and if other jurisdictions or countries
25 have these emergency exit doors. In addition, we'll be

1 discussing the window height, exit window operations,
2 flammability standards with the Federal Railroad Administration
3 and their testing, and the driver evacuation training will be
4 discussed.

5 We'll begin with Mr. Saul, and Mr. Saul, we're going
6 to have to put you on the hot seat again, two panels in a row.
7 The first question is, in 1999, the Safety Board conducted a
8 study on selective motorcoach issues. In this study, the Board
9 made safety recommendations H9909 asking NHTSA to revise FMBSS
10 217 on bus window retention and release to require that other
11 than floor level emergency exits be easily openable and that
12 they remain open during an emergency evacuation when a
13 motorcoach is upright or at an unusual attitude. What has
14 NHTSA done to close this recommendation?

15 MR. SAUL: If I can, let me start by addressing the
16 emergency exit standard that we have. It really has two
17 balancing portions to that. It addresses emergency exits, but
18 it balances with that ejection mitigation. So that there's
19 also window retention requirements to prevent motor vehicle
20 occupants from being ejected through the bus windows, and those
21 balance with the emergency exit requirements.

22 The -- I mentioned on the previous panel that we have
23 a systematic regulatory review. The emergency exit is one that
24 was scheduled and has been under review this past year. I
25 believe that the -- at the staff level, there were discussions

1 between the NTSB staff as well as the NHTSA staff about our
2 progress on that, and the -- as a part of this regulatory
3 review, we are looking at that recommendation and have -- by
4 the end of this year expect to have a solution in discussions
5 with the NTSB staff as to how we expect to address that.

6 MR. KAMINSKI: Okay. Now has NHTSA investigators
7 studied any -- whether elderly or disabled people, persons,
8 would have been -- would have the strength necessary to open an
9 emergency window and once the window is open, whether such a
10 person would be able to negotiate the height of the window in
11 order to escape an emergency situation?

12 MR. SAUL: I think there are a couple of pieces to
13 that. One is the force or the strength required to open the
14 window in the first place. We have a lot of anthropometry data
15 that's available. We've, you know, over the years looked at
16 that, and we've re-examined that, to see that the force
17 requirements that are required to open the windows are
18 consistent with existing anthropometry information.
19 Anthropometry is probably not the right term here. It would be
20 more of human factors rather than anthropometry. So that is a
21 part of our regular review that, you know, if there's any
22 additional information that's come since our last time we've
23 reviewed this, that will be included in this regulatory review
24 that is underway.

25 I think a second point you alluded to was

1 specifically to the elderly. Certainly the elderly are an
2 important consideration from us. We're very cognizant of the
3 aging population and the baby boomers as they migrate to -- in
4 the ages and graduate to retirement ages, and the human factors
5 information we collect addresses those. So far as I know, the
6 information we have says that the human factors information
7 will be consistent for elderly but that will again come out in
8 our regulatory review as it's completed this year.

9 And was there a third part, regarding negotiation
10 with -- was that addressing --

11 MR. KAMINSKI: Negotiating the height, whether they
12 have to drop down?

13 MR. SAUL: Fortunately, as I indicated in the last
14 panel, that's the last, last of the strategies that you want to
15 get to. We are aware of at least one of the cases that was
16 presented in this morning's panel, where elderly occupants were
17 able to successfully negotiate the emergency exit, exit through
18 the windows and drop down to the ground and escape the fire.

19 MR. KAMINSKI: Okay. Now other than regulatory
20 review, does NHTSA plan on any testing of motorcoach emergency
21 evacuations involving the disabled or elderly passengers?

22 MR. SAUL: The emergency evacuation procedures for
23 the disabled would tend to be more issues in health and human
24 services and federal transit as you're looking as to what the
25 proper choice or the best choice for a vehicle would be for

1 transport. We also work with those, those agencies and other
2 organizations on an as needed basis. If there are indications
3 that motor coaches would -- were to become more prevalent in
4 transporting those with certain disabilities, we, as in the
5 past, would work with them. We've set up special needs in
6 other areas, and this would probably fall into that.

7 I guess the last point that I would make is that the
8 disability I think would be very analogous to in the
9 educational field, the particular disabilities would be very
10 specific and would almost have to be tailored to -- on an
11 individual basis as to what is required to, to most
12 successfully or what accommodations would best suit that
13 particular need, and again, that's the sort of things that we
14 would tend to do with other organizations and agencies to
15 address those needs.

16 MR. KAMINSKI: Okay. Now has -- I think you might
17 have answered this but has NHTSA considered how during an
18 emergency involving numerous physically or mentally challenged
19 passenger, they would be able to successfully evacuate a
20 motorcoach through these exit windows?

21 MR. SAUL: Yeah, I think what I just answered would
22 address that.

23 MR. KAMINSKI: And I think we touched on this in the
24 last panel, but the Federal Aviation Administration and the
25 Federal Railroad Administration both have standards requiring

1 fire retardant materials inside their vehicle cabins as well as
2 standards for materials for smoking emissions characteristics.
3 With the rise in motorcoach fires nationally, has NHTSA
4 considered revising FMVSS 302 on flammability of interior
5 materials to include stricter fire retardant materials and
6 smoke emission characteristics?

7 MR. SAUL: Yeah, I think we pretty much addressed
8 that in the last panel, that we also have that as part of our
9 regulatory review, and other standards and -- that might be in
10 existence since we last in that review process and certainly
11 the FRA and FAA would be part of that review.

12 MR. KAMINSKI: In April 2002, NHTSA and Transport
13 Canada initiated a joint study to determine methods for
14 improving motorcoach occupant protection. What is the current
15 status of that study?

16 MR. SAUL: That's correct. The study was initiated,
17 I mentioned that there's the balancing between emergency exits
18 and mitigating ejection, and that study grew out of our concern
19 about retention of the occupants within the occupant
20 compartment. The study is, is nearing completion. We expect
21 to see a final report within the next month or so, and that
22 will factor into our regulatory review that we finish late this
23 year.

24 MR. KAMINSKI: Okay. Has NHTSA considered setting
25 any standards for firewalls similar to those issued by the FAA?

1 MR. SAUL: I'm not particularly familiar with the FAA
2 requirement, but I think as a part of the studies that I talked
3 about in the previous panel, that we did in the 1990s, we had
4 seen that the fires that tended to occur within engine
5 compartments seemed to be contained or did not have enough
6 oxygen supplied to them if you will, to really erupt, to not
7 allow evacuation of the compartment. And, and there were
8 also -- the existing firewalls were easily breached through the
9 many systems, if you will, hoses, tubes, wiring, grommets, that
10 sort of thing that would enter into the compartment, the
11 passenger compartment. Now that was specifically looking at
12 passenger car type of vehicles rather than motorcoaches as in
13 this case, although it looks like the firewall for an engine
14 compartment is not at issue in this particular case.

15 MR. KAMINSKI: How about any discussion for firewalls
16 for the wheel wells of the motorcoaches or --

17 MR. SAUL: We have not looked at firewalls. I think
18 from a lot of the testimony that we heard earlier, in the last
19 panel, that there are a lot of flame resistant stainless steel
20 in some of those areas, and yet if you have a tire fire that's
21 a fueled fire, it has other routes of engulfing with the flames
22 as we've seen in this particular case.

23 MR. KAMINSKI: Okay. Thank you, Mr. Saul. I'll move
24 onto questions for Mr. Murphy from MCI.

25 Mr. Murphy, does MCI consider FMVSS 217 on bus window

1 retention and release to be effective or is it design
2 restrictive?

3 MR. MURPHY: Well, in consideration of the question,
4 I think effectivity is really a decision under NHTSA. NHTSA is
5 the one who promulgated the rule. They're the ones who made
6 the determination and really wrote the standard as Mr. Saul
7 described as being both a window retention standard as well as
8 a window release or emergency exit style standard. They are in
9 our coaches. They certainly have been used. We've seen
10 incidents where they've been used and used effectively to get
11 out of the vehicle in an emergency. An interesting thing that
12 should be raised about this particular coach we're talking
13 about, emergency exit and emergency egress, the E model coach
14 involved in this particular incident, as was mentioned in an
15 earlier panel, carried six emergency exit windows on either
16 side of the vehicle. Under FMVSS standard, when you use the
17 calculation that 217 has, the minimum required for an over-the-
18 road bus is three per side. So in actual fact, this particular
19 vehicle was equipped with twice as many emergency exits as
20 required under the Federal standard.

21 Design restrictive? By virtue of the standard, it is
22 design restrictive in that it tells you the method by which to
23 retain the window and how to test it to ensure that that
24 retention is met, and it goes further to tell you how that
25 window must be released, how that window must be marked. So

1 from that perspective, it is design restrictive.

2 We certainly have over the years, in previous
3 meetings with NHTSA, during the crashworthiness hearings and so
4 on, we've always been open, whether it be MCI or the bus
5 industry, to sitting with NHTSA and looking at these standards
6 openly to discuss whether any improvements do need to be made
7 and how best to put them into effect.

8 MR. KAMINSKI: Now does MCI feel that these window
9 heights are acceptable for elderly and disabled to evacuated
10 from?

11 MR. MURPHY: That is a question -- I'm put in an
12 interesting position because I'm here in my role with MCI to
13 speak on their behalf, and this also brings home a very
14 interesting situation as being a disabled consumer. The
15 reality of it is, the emergency exits and the intent and
16 expectation of any emergency exit is for individuals who have
17 ability and agility to operate them. In reality, in this
18 particular situation, as I heard through testimony and from
19 what I've read, a number of individuals on this bus were unable
20 to walk or in some cases paralyzed. So to answer the question,
21 to be evacuated from windows of these heights, they would
22 certainly be relying on somebody else to assist them with that
23 evacuation. The bottom line is, you need to get the people out
24 of the vehicle, whether it's by a window, whether it's by a
25 door, the choice -- the alternative choice is what it is. So

1 I'm not sure if that entirely answers your question but the
2 effect is to get people out of the vehicle. This vehicle was
3 well equipped to allow people egress with, in this particular
4 case, they needed assistance.

5 MR. KAMINSKI: Okay. Thank you. How practical is it
6 to convert a wheelchair access door so that it has a dual
7 purpose of also being an emergency door?

8 MR. MURPHY: Interesting question I mean for an
9 engineer. I'm not an engineer to start with, but anything is
10 possible. You can take a door and you could add a handle.
11 It's a mechanical, it's a design function. The question really
12 becomes are you able to, and when you start looking at what
13 this particular door's function is, and you start saying, well,
14 if you put a handle on it, it becomes an emergency exit, that's
15 an erroneous assumption. 217 makes some very specific
16 requirements for emergency exit. There is clear path. There's
17 method of opening. There's a very interesting one, and it
18 comes back to the disability issue, is that they are very clear
19 about not placing wheelchairs or mobility aids in the path of
20 an emergency exit or attachment of shoulder restraints and
21 such. So your suggestion and your question to turn lift door
22 into emergency exits, is not feasible in that they're going to
23 be blocked by the virtue of their design. But a handle could
24 be added.

25 We've heard some testimony and people's comments

1 about -- I think it was our friend from Bus Trader maybe made
2 the comment about doors being opened from the interior. There
3 are issues that are there. The reality of it is, 217 gives the
4 OEM and the operator an opportunity to address emergency exit
5 by either window means or by door means, and as I said in this
6 particular application, motorcoaches are well equipped with
7 means of egress. In this particular case, there was no door.

8 The other thing that needs to be considered is what
9 is very common for wheelchair access doors is a sliding door.
10 In some cases, it's an air operated door. So there are some
11 features within the design of wheelchair access doors that
12 would not allow it to be an emergency exit.

13 MR. KAMINSKI: Okay. Does MCI conduct any studies or
14 testing concerning the flammability of smoke emissions or
15 interior materials in its motorcoaches?

16 MR. MURPHY: As Mr. Capstick, in the previous panel,
17 talked about, MCI certainly complies to all the requirements of
18 302, FMVSS 302, at a minimum. Beyond that, MCI has made it a
19 practice for many years of requiring that vendors supplying
20 product for our vehicles certify that the products comply to
21 302, whether that be an interior component or whether that be
22 an exterior component unless, of course, steel, for example,
23 and stainless steel and whatnot, certainly would not fall under
24 that qualification, but any of the plastics, any of the
25 fiberglasses and so on, it is a requirement of MCI that those

1 products meet the 302 standards.

2 MR. KAMINSKI: What type of safety instruction does
3 MCI put on its motorcoaches, and are they permanent?

4 MR. MURPHY: A clarification to your question. Are
5 you speaking about safety instructions as in emergency exit
6 window instructions or are you speaking globally?

7 MR. KAMINSKI: Emergency exit windows.

8 MR. MURPHY: Okay. MCI certainly complies to at a
9 minimum the 217 requirements for labeling for emergency exits
10 whether that be the room escape hatch or whether that be the
11 emergency exit windows. This particular coach, the E coach,
12 introduced a different labeling that is common. I was involved
13 in that particular project where we took a look at the intent
14 of 217 and the message we were trying to deliver, and in your
15 exhibits, in fact, I can't remember the exhibit number, but you
16 specifically show a photograph of labeling on one of the
17 windows of an exemplar coach. That particular photograph
18 wasn't a complete labeling, however.

19 The window labels that we utilize and the standard
20 basically says it has to be a contrasting color, and it has to
21 deliver the message on how to open. What we did in this
22 particular case is use striking contrasting colors, yellows,
23 reds, greens, blacks, and attempted to use symbology as much as
24 possible to deliver the message. We did that for the emergency
25 exits on the windows as well as on the doors. As well, the

1 words emergency exit are applied beside. Early on in the E
2 coach it was applied with just the symbology and after some
3 discussion, although it was determined that it was not an issue
4 of non-compliance, we added "emergency exit" text on all of
5 these coaches. Permanent? Yes, they are, I'm trying to
6 remember, the Lexan style plastic, to insure that the labeling
7 doesn't rub off, and they are glued onto the crash bars.

8 As anything, and I'm sure people here will know, even
9 a metal part that's riveted on, if somebody wants to, they'll
10 remove it. So it is permanent? It's as permanent as it can be
11 without abuse. Is it replaceable? Absolutely and available at
12 anytime.

13 MR. KAMINSKI: Thank you very much, Mr. Murphy. That
14 concludes our questions for you. Moving onto Van Hool and ABC
15 Bus Company, Mr. Louis Hotard.

16 Does Van Hool consider FMVSS on bus window retention
17 release effective or is it design restrictive?

18 MR. HOTARD: Well, I guess for everybody's benefit,
19 Van Hool, besides importing buses into the U.S., builds and
20 manufactures coaches pretty much worldwide, coaches and transit
21 buses. Therefore, they're pretty familiar with making design
22 changes as per the destination country of their vehicles.

23 However, since Van Hool's entry into the U.S. market
24 in the mid eighties, I mean they have also met 217 as well
25 without any issues as far as emergency exits and window exits.

1 The 217, the standards of the window retention I think on face
2 value are, are good given that the frame of the coach stays in
3 tact. Depending on an accident, or type of an accident, if the
4 roof structure of the coach is distorted at any -- in any
5 significant way, the windows can be popped open, just because
6 of the distortion in the roof structure and the wall structure.
7 So from that standpoint, they might not be able to be retained.

8 Normally in a fire situation, when there's no
9 degradation of frame structure, they should remain closed and
10 not present any restriction as far as that part -- from that
11 standpoint of passengers operating them.

12 MR. KAMINSKI: What is the European experience with
13 respect to the bonded window and side exits?

14 MR. HOTARD: Well, in general I think the European
15 experience is good. I believe the U.S. is the only country
16 that is using the opening windows based on the 217. However,
17 the bonded windows present discussion topics as follows:
18 bonded windows in all positions certainly can enhance the
19 structure of the vehicle, as you know from cars and other
20 things that use bonded windows. It provides a certain amount
21 of strength. The tradeoff of that is when you use bonded
22 windows for emergency exits, you need to use tempered glass.
23 You can't use safety laminated glass because you can't break it
24 to get out. So that means that in European coaches, they use
25 double pane tempered windows, and the, the method of emergency

1 exit if the little hammers that brake the glass from the
2 inside, and they're attached in the vehicle at various points
3 easily accessible to passengers.

4 That could present a problem here from the standpoint
5 of kids using them for toys and other things and inadvertently
6 breaking windows when they shouldn't be. The tempered glass
7 also can be easier to get into from outside. I think this
8 morning we heard from the first three witnesses that said they
9 couldn't get into the vehicle because of laminated glass, and
10 to my knowledge, there's no description in 217 outlining
11 laminated or tempered, only the method of opening and closing
12 and retaining the windows. So that's a tradeoff as well as
13 from the standpoint of outside people trying to get into the
14 vehicle.

15 And also, on that note, if you're talking about
16 passengers egressing from a coach, one of the main things we
17 heard this morning was that the smoke was so terrible in the
18 coach that they couldn't get in it to get the people out. If
19 more windows can be opened quickly, maybe that would aid in
20 venting the coach and allow more time to get passengers out.
21 So that's a consideration that might have some value as these
22 discussions go on.

23 There are two countries in Europe, Sweden and the UK,
24 that have asked the European Commission to evaluate tempered
25 windows and glue in windows, but from what Van Hool has told

1 me, that that probably will not change anytime soon, that
2 they're going to stay with the bonded tempered glass in the
3 dual pane configuration.

4 As far as the exits go, the use of the second door on
5 Class 3 motorcoaches, which these are, is mandatory, but it
6 doesn't have to be considered an exit door -- I mean an
7 emergency exit door. They can be -- most of the side service
8 doors are air operated. Passengers can, you know, enter or
9 exit from the rear at their choice but the only time that a
10 door like that is considered an emergency door is if a
11 particular country of destination, they can't make the door big
12 enough to be a service door, and it's a smaller door, then they
13 consider it an emergency door, and it's marked and labeled as
14 such with instructions to use it, and that still complies with
15 their regulation of having two doors per coach.

16 MR. KAMINSKI: Okay. But can you share with us
17 the -- how the European standards for building a Van Hool
18 motorcoach differ from the U.S. standards for the windows and
19 doors exits? I'm sorry. How does Van Hool configure its
20 motorcoaches with the side exits and why don't the side exits
21 appeal to the U.S. buyers?

22 MR. HOTARD: Well, I talked to Larry a little bit
23 about that this morning, and the problem with the side exits on
24 the European design is that as he stated, in order to have a
25 tour bus, they placed the restroom also at the bottom in the

1 same floor plane as the luggage compartment would be. So from
2 the passenger floor area, down to the baggage floor area, in a
3 very short distance, the steps are very steep. So in the U.S.,
4 allowing passengers to enter and exit coaches with one driver
5 would be of concern to owners and passengers' safety, and also
6 in that configuration, passengers would have to go down those
7 steps to use the restroom at night or daytime or whatever. So
8 whenever the coach is moving, you would have passengers
9 negotiating these steps to use the restroom. So that feature
10 was not received well from U.S. customers where we're
11 accustomed to having the restrooms in the same passenger
12 floor level without going down steps.

13 MR. KAMINSKI: I believe you have a slide.

14 MR. HOTARD: Yes, sorry. This is a typical European
15 coach. If you look at the coach's side door, it's pretty
16 large, and it's designed, like I said, as a service door,
17 pretty similar to the entrance door in the front. And if you
18 would walk into that door as discussed this morning, an
19 immediate right turn would be a restroom, and also the steps
20 would go right up to the top. So they're pretty steep. This
21 is about a 45 foot coach as well, just about like what's
22 imported here.

23 MR. KAMINSKI: Okay. How do the European regulations
24 on flammability or smoke emissions of interior materials
25 compare to the U.S. standards, FMVSS 302?

1 MR. HOTARD: In general, they're almost identical.
2 What Van Hool provided me was that directive 95/28/EC is their
3 flammability standard, and the first two items on the scope and
4 test conditions are very similar. One of the main things that
5 was pointed out to me, the difference was that the FMVSS
6 requirement is a single test and the EU directive is a five
7 sample test. So they have to show repeatability, not just in
8 doing it one time. But everything else is virtually the same.

9 MR. KAMINSKI: Thank you. What type of safety
10 instructions does Van Hool put on its motorcoaches and how
11 permanent are they?

12 MR. HOTARD: I think as Paul said, they're as
13 permanent as a kid scratching them off and removing them and a
14 lot of customers buy them to replace. Each window is marked
15 appropriately and where the handle is located and where to find
16 it, how to open it. Roof hatches are labeled and marked as
17 well. The entrance door, if it has to be opened, and the
18 electrical system is out, there's instructions on how to open
19 the entrance door from inside to exit the vehicle.

20 MR. KAMINSKI: Okay. What -- could you describe the
21 type of firewalls that Van Hool has in its motorcoaches to
22 protect passengers from fires originating in the engine and the
23 wheel well?

24 MR. HOTARD: Basically we're doing the same thing as
25 Motorcoach is, running steel plates, stainless or galvanized

1 steel plates from the back wall of the coach up to the forward
2 to right over the tires, towards the first luggage bay. And
3 also thermal insulation or noise insulation is also put
4 underneath as well.

5 MR. KAMINSKI: Are these firewalls pretty effective
6 at keeping the fire from reaching the passenger cabin?

7 MR. HOTARD: Well, I think effective is, is
8 subjective. I think it certainly slows it down enough to get
9 passengers out. I think that's the main goal, is to keep it at
10 bay long enough to get passengers out. I don't think based on
11 what we've heard today with window construction and flame going
12 up the sides, that we could ever totally keep it out, but it
13 slows it down enough to get passengers out.

14 MR. KAMINSKI: Okay. That concludes my questions for
15 you, Mr. Hotard. I appreciate your help. Next we'll move onto
16 Mr. Ford.

17 Mr. Ford, you told us what your present job is. Can
18 you tell us what you did prior to this job?

19 MR. FORD: Yeah, I am a retired Lieutenant from the
20 Wilmington Fire Department. That's the only professional fire
21 department in the State of Delaware. I retired from there in
22 1987, and after retiring, I stayed in the fire business for a
23 while as a criminal investigator with the State Fire Marshal's
24 Office. I was with the arson unit.

25 MR. KAMINSKI: Thank you. Now what policies does the

1 Delaware Transit Corporation have for transporting passengers
2 who need oxygen cylinders?

3 MR. FORD: We transport passengers through our
4 paratransit service who are ADA eligible. A lot of them need
5 oxygen. We are required to transport those oxygen tanks along
6 with the passenger. Are drivers are instructed to secure them.
7 We have a series of bungee cords, a lot of different mechanisms
8 that will allow them to secure the tanks so that they don't
9 jump around, bounce around the vehicle, but we only transport
10 the tank that is in use. No spares.

11 MR. KAMINSKI: And what type of fire training does
12 the Delaware Transit Corporation conduct with its drivers?

13 MR. FORD: We train two different aspects. We train
14 them in fire extinguisher familiarization. We don't do hands
15 on training with them. We do not let them activate the
16 extinguisher and use it. What we do put the emphasis on is
17 evacuation. We teach them to know the customers that they're
18 transporting. They can do that through their manifest. They
19 know ahead of time who they will be picking up, whether they're
20 ambulatory or not. They know what their mental capacity is in
21 those cases, and after a period of time, they drive the same
22 people so many times, that they get very familiar with their
23 customers. So we ask them to focus on that. Know who they
24 have on board, what their abilities are, what their inabilities
25 are, what assistance they would need in the event an evacuation

1 is necessary, and we through the emphasis totally on evacuation
2 of the bus.

3 MR. KAMINSKI: That was going to be my next question,
4 your evacuation training for the drivers. So you concentrate
5 more on that then you do with the fire training itself?

6 MR. FORD: Now in my past life, I trained
7 firefighters and it takes a long while to train a firefighter.
8 To train a bus driver to be a firefighter is virtually
9 impossible. It cannot happen.

10 MR. KAMINSKI: I thank you. That completes my
11 questions for you, sir.

12 MR. FORD: If I may?

13 MR. KAMINSKI: Sure.

14 MR. FORD: We do have a slide.

15 MR. KAMINSKI: Oh, that's right.

16 MR. FORD: And I think, you know, in fairness to, to
17 the Board and the rest of the audience, that we want to make
18 sure that we're not comparing apples to apples here. We're
19 talking about our paratransit service is a 25 foot bus. You
20 see the regular passenger door in the front for ambulatory
21 passengers. We have the emergency exit in the rear. We also
22 have the wheelchair loading area that I think contrary to some
23 beliefs, we will use as an emergency exit under certain
24 conditions. If necessary, the drivers are taught to go out and
25 lower the wheelchair lift halfway if necessary and provide a

1 big step for people who may need assistance, ambulatory people
2 or even to set standard wheelchairs down.

3 Also what you can't see is the roof hatch that we
4 have, and four of the windows are emergency exits, two on each
5 side, one front and one rear. So there's a lot of ways to get
6 out of that bus but the key is the bus is 25 foot. The
7 capacity is not near what you're talking about in a motorcoach,
8 and I guess if there's a message there, transport the -- use
9 the right vehicle to transport, you know, the right population.

10 MR. KAMINSKI: Thank you, Mr. Ford. Moving onto
11 Mr. Knote with the Federal Railroad Administration.

12 Could you please tell us what the current standards
13 are in flammability and smoke emissions from railcar interiors
14 passenger cabin materials?

15 MR. KNOTE: Sure. Back in 1999, the Federal Railroad
16 Administration went from recommended practices, recommended
17 practices had been in place going back to the seventies,
18 formally in 1984, revised in 1989. Finally after a serious --
19 accident, that the NTSB did a review of as you're doing right
20 now, and recommendations from the NTSB, we began a series of
21 rule making which culminated in '99 with 49 C.F.R. 238, which
22 is an equipment safety standard regulation.

23 A piece of that, one section of that, 49 C.F.R.
24 238.103, with an Appendix B, specifically deals with fire
25 safety. Appendix B is the portion that dictates what tests or

1 specifies what tests should be administered to different
2 materials within the rail car.

3 The regulation, that specific part of the regulation,
4 covers fire ignition. It'd designed to minimize spread of
5 smoke and flame, and maximize available time for evacuation. I
6 will say that our strategy in developing these regulations is a
7 systems approach. We just don't look at fire safety alone. We
8 look at the fire safety along with car design, along with
9 emergency evacuation. For this regulation, we looked at the
10 fire safety piece of it, railcar design and the materials that
11 went into it were considered. Detection and suppression
12 systems for fire was considered along with emergency evacuation
13 and as we look at these rules which we're continuing to today,
14 we evaluate those.

15 My specific responsibilities in emergency
16 preparedness, we have a regulation for that, too, and that
17 covers plans, procedures, training, evacuation, and we'll get
18 more specific to that in one of your questions. So what I'm
19 saying is that we move from recommended practices to a
20 regulation, and that's what's in our regulation today.

21 MR. KAMINSKI: And how, how did the rail industry
22 initially respond to these changes you made?

23 MR. KNOTE: They embraced it. Actually after -- the
24 way we do our rule making is through a Rail Safety Advisory
25 Committee, and before we even got with NPRM or an advanced

1 NPRM, we bring the group of parties that are -- have a stake in
2 this, and that's us in the FRA, oftentimes FTA from our DOT
3 modes, rail labor, rail itself, vendors, and we sit down and we
4 begin to identify areas of mutual interests. In this
5 particular case, we're dealing with fire safety. We, you know,
6 started with the 1989 standards or actually recommended
7 practices and worked its way up.

8 Once we got to the point of a final rule, there was
9 general agreement that what was in that rule needed to be in
10 that rule. However, there was some hesitation and some
11 properties wanted to go back to the 1989 rule because the
12 hesitation was our current standards match refurbishing cars
13 and new cars and have some similar test requirements and they
14 felt that that was really onerous to have them do that, along
15 with the fact that procurement practices in our -- in their
16 industry takes a long time, and there were stockpiles of
17 materials, and we had implementation dates. Those things had
18 to be reconsidered. So what we did after we had some, some
19 follow on meetings after the rule was then put into place, the
20 same process with our RSAC committee, we reissued the rule
21 specifically to fire safety in 2002. And really all we had to
22 do was, we gave them some more time in implementing some of the
23 requirements for existing equipment. We did -- we went to some
24 more lengths on explaining what the tests were in the current
25 regulation and comparing them back to the 1989 regulation to

1 make them see that it wasn't really all that onerous and
2 different. So that's where we are.

3 MR. KAMINSKI: And how do these regulation standards
4 compare to the FAA standards on flammability and smoke
5 emissions?

6 MR. KNOTE: Well, both as was mentioned here earlier,
7 both the FRA and the FAA and Motor Highway have certain
8 standards for testing materials. FRA and FAA evaluate smoke
9 and flame rates, just like I've heard here today. We have
10 slightly different tests for different components of the rail
11 car. The FAA, for instance, requires that all interior
12 material be tested, and they have a, they have a test method
13 that's a little different than the one we have. We don't
14 require all interior material to be tested. We require most of
15 it. It all depends on the size. Certain sizes, generally less
16 than 18 inches in diameter doesn't have to be tested, unless
17 it's in an area where there's an ignition source.

18 Really, the holistic difference is in our test and
19 our test is the operating environments. Their operating
20 environment and our operating environment are different. They
21 require that their evacuation process and their testing
22 accomplish evacuation in 90 seconds. We don't have that
23 standard in ours. We have a far different environment and
24 don't need that particular standard.

25 We did give you a paper. We ought to mention that

1 these questions that are being asked, we have on record
2 detailed answers. FRA, not myself, they have now and several
3 of the others that are involved in that, went and gave you lots
4 of detail.

5 MR. KAMINSKI: That will be included. It's a 10 page
6 response you gave us to all these questions in length, and that
7 will be included in our docket.

8 MR. KNOTE: Uh-huh. The test, the specific test that
9 the FAA use are small burner tests, oil burn tests and heat
10 release tests, we certainly use them but not in all the same
11 capacities that they use them.

12 We -- most of our test requirements, and I said the
13 rule was amended, and these are available on the website, in
14 our current issue of 49 C.F.R. 238, the Appendix B testing
15 criteria is all in there. We use test, ASTM type testing and
16 some of the other testing I heard here today is different than
17 ours. And the railroad or the railcar manufacturer has to test
18 the material, and we have in our material catalog seats,
19 upholsteries, walls, thermal, air conditioning ducts, flooring,
20 just to name a few of them.

21 MR. KAMINSKI: And can you tell us what significant
22 changes the Federal Railroad Administration has made directly
23 related to passenger egress from railcars in past 10 years?

24 MR. KNOTE: Sure. Again, we went from 1994 where we
25 had recommended practices, to a regulation for passenger train

1 emergency preparedness. It's 49 C.F.R. 239. A passenger train
2 preparedness requires a railroad more than just to have egress
3 pieces on their, to have plan -- emergency plans, have a
4 minimum number of egress doors, to put signage on their doors
5 for both knowing where the egress window happens to be and how
6 to operate that egress window. We also have a requirement to
7 have every access -- every egress door or every door that's
8 intended as the regulation says for egress, marked with a sign
9 and with instructions on it. Now these signs are luminescent,
10 to take into the night. They also -- for doors, if the door is
11 marked with an emergency light, fixed emergency light with a
12 separate power source, we'll accept that.

13 MR. KAMINSKI: Now has the Federal Railroad
14 Administration done any studies or research on how the elderly
15 or disabled can evacuate a railcar in an emergency situation?

16 MR. KNOTE: Well, that 1994 guidelines also contained
17 information to railroads in preparing emergency preparedness
18 plans on issues with preparing for the elderly and disabled
19 communities. We require when we do a review of the emergency
20 preparedness plan which has to be submitted to us and we have
21 to approve it, we require them to have a specific section on
22 what issues they're going to be dealing with for the elderly,
23 the handicapped, and I guess you'd say more special needs
24 because a lot of them transport young children and youth groups
25 that need to be addressed in that.

1 Currently I'm working with the Emergency
2 Transportation Subcommittee of the Interagency Coordinating
3 Council on Emergency Preparedness for the Disabled. This comes
4 out of a Presidential Executive Order that was signed in 2004.
5 It's Executive Order 13347, which requires Federal facilities
6 and Federal, state and local agencies to have specific
7 emergency plans for special needs type people within their
8 emergency program, and we're working with that Coordinating
9 Council now. Right now they're working on hurricane season,
10 and coming up with transportation plans and identifying needs
11 in the areas that could be hit, but our charge is to come up
12 with a set of recommended practices for all modes of
13 transportation.

14 MR. KAMINSKI: Thank you, Mr. Knot. I have a follow
15 up question going back to Mr. Saul.

16 How do the -- how do you open a window for those who
17 are unfamiliar here, the side windows, the emergency exit
18 windows?

19 MR. SAUL: Well, it would depend on the design, but
20 it has -- one of the designs would be that you have two
21 distinct motions if you will but that's really design specific.
22 We require that you -- the forces to release the window and
23 then the force to open the window, but the actual design is
24 going to be, you know, design specific to each manufacturer.

25 MR. KAMINSKI: And the windows are all hinged at the

1 top?

2 MR. SAUL: They typically would be, yes.

3 MR. KAMINSKI: Okay. That concludes our questions.

4 CHAIRWOMAN HIGGINS: Thank you. Now we will go to
5 the parties, and we will start with FMCSA.

6 MS. McMURRAY: We have no questions for this panel.

7 CHAIRWOMAN HIGGINS: NHTSA?

8 MR. MEDFORD: I have a question for Mr. Ford.

9 Mr. Ford, the bus that you showed us in your, in your
10 photograph, with lots of emergency egress and accommodating the
11 disabled, was that designed around a specific standard? Was
12 there a guideline that you followed? What, what criteria did
13 you follow in ordering those buses for those purposes?

14 MR. FORD: We have a maintenance engineer on staff
15 who researches all of the latest technologies and, and
16 equipment associated with bus manufacture. He puts together
17 specs. Any specs -- spec that is safety related, he'll run
18 past me. We'll discuss them and decide whether it's an
19 advantage or it's not an advantage, and we've kind of designed
20 these features into the bus itself. It's a Goshen bus. Most
21 of the features are pretty standard.

22 MR. MEDFORD: Okay.

23 MR. FORD: But it's also designed for power transit
24 service, so, you know, like I said, I don't want to get into a
25 situation where people think we're comparing apples to apples

1 here. We're really not. You know, we're using this particular
2 bus for paratransit service, and it's designed around that use.

3 MR. MEDFORD: Thank you. That's all I have.

4 CHAIRWOMAN HIGGINS: Texas Department of Public
5 Safety.

6 CAPTAIN PALMER: No questions.

7 CHAIRWOMAN HIGGINS: ArvinMeritor.

8 MR. JOHNSTON: No questions.

9 CHAIRWOMAN HIGGINS: Bridgestone.

10 MR. QUEISER: No questions. Thank you.

11 CHAIRWOMAN HIGGINS: Sunrise.

12 MR. SCHLOTT: No question. Thank you.

13 CHAIRWOMAN HIGGINS: MCI.

14 MR. CAPSTICK: No questions. Thank you.

15 CHAIRWOMAN HIGGINS: United Motorcoach.

16 MR. PRESLEY: I have a question directed to
17 Mr. Murphy. Actually, it's sort of a three part question but
18 you'll see where I'm going.

19 Where typically would an access -- wheelchair access
20 be located in the typical motorcoach, and how is that -- the
21 wheelchair equipment generally used or what components of the
22 motorcoach are used in operating the wheelchair equipment?
23 And, is any of that equipment compromised in a fire such as the
24 one we had in Wilmer?

25 MR. MURPHY: Well, a typical design in MCI coaches,

1 one model utilizes a -- not unlike European coaches, a -- well,
2 in this particular model, the EJ has the wheelchair access door
3 located at the rear, ahead of the lavatory. In our D model
4 coaches, our G model coaches, the wheelchair access location is
5 basically over baggage bag 2 which is the middle of the coach.
6 The second part of your question?

7 MR. PRESLEY: What in the motorcoach is used to
8 operate that equipment and is that -- is operation of that
9 equipment compromised during a fire?

10 MR. MURPHY: Well, what parts, I mean the wheelchair
11 lift and the components obviously are commonly deriving its
12 power from the coach's electrical system. The door in the case
13 of air powered, utilizes air from the air system. In other
14 styles, they're manual operation or may have an air latch. The
15 lifts by regulation are required to operate manually. So if
16 you end up in a situation where the wheelchair lift fails by
17 virtue of loss of power or by some other means, there is a
18 manual pump operation which has been required for wheelchair
19 lifts for as long as I've been in the industry which sadly has
20 been a very long time. And the doors all have an override
21 mechanism so they can be operated. So if there is a "failure"
22 they are not incapacitated, but certainly I was involved as you
23 were and many other individuals here were involved in
24 developing an egress emergency evacuation process and we talked
25 about use of wheelchair lifts or in most cases not using the

1 wheelchair lift in getting people out of the vehicle, as the
2 goal is to get them out as quickly as possible. I think that
3 answers all your questions. A follow up.

4 MR. PRESLEY: A follow up. How would this equipment
5 have worked in this particular fire? In other words, as you're
6 describing it to me, the door would have been located
7 approximately directly over the wheel fire.

8 MR. MURPHY: In this particular situation, it's --
9 yes, that location would have been involved, but again the
10 wheelchair lift door is not designated emergency egress, as
11 Mr. Ford talked about they may use their lift, and I wanted to
12 qualify. We're not suggesting people don't use it when it is
13 reasonable. We're suggesting the doors are not compliant to
14 Federal standard as an emergency exit door, and therefore
15 shouldn't be considered an emergency exit door. If they can be
16 utilized reasonably, absolutely. In this particular case or as
17 in any case, all the windows on the vehicle were emergency
18 exits, and you obviously exit out the best access you have.

19 CHAIRWOMAN HIGGINS: Thank you. Board of Inquiry,
20 Mr. Chipkevich.

21 MR. LITTLER: I have one.

22 CHAIRWOMAN HIGGINS: Oh, I'm sorry. I apologize.

23 MR. LITTLER: Thank you. The American Bus
24 Association has several questions, and I think I'd ask these
25 probably to this panel and potentially the same questions to

1 some folks in tomorrow morning's panel, but I'd like to start
2 with Mr. Saul. You mentioned something in your testimony, sir,
3 that NHTSA believes or is deferring consideration of standards
4 for emergency egress, persons with disabilities, and you
5 mentioned something about potentially Health and Human Services
6 or other agencies. Did I get that incorrectly or do you think
7 that DOT is not the agency to look at this issue?

8 MR. SAUL: DOT is involved in that, as Mr. Knote had
9 indicated for the Executive Order for emergency preparedness
10 for evacuation of the disabled. DOT is very much involved in
11 that. The National Highway Traffic Safety Administration has
12 not been a part of that. That has fallen to this panel that
13 Mr. Knote had indicated. We're not on that.

14 MR. LITTLER: I guess the reason that I was going
15 this direction is that in 1998, formal rules were established
16 for what the agency calls over-the-road bus and motorcoach for
17 accessibility rules for carriage of persons with disabilities.
18 So we already have very established rules, and there are
19 provisions in the rules for a great deal of requirements. The
20 one area that was not addressed, of course, was specific
21 standards for dealing with persons with various disabilities in
22 an emergency, and so I just was wondering if we can expect
23 anything in the future from DOT in that area or --

24 MR. SAUL: Are you speaking from DOT or from the
25 National Highway Traffic Safety Administration? I believe

1 that --

2 MR. LITTLER: Well, under the Part 37 Rules I think
3 that you have the lift standards and the door standards for the
4 lift and those things under the Federal Motor Vehicle Safety
5 Standards now. So --

6 MR. SAUL: We do have specifications for vehicles
7 that are manufactured and equipped with a wheelchair lift for
8 example. There are specification for those but we don't
9 mandate that those are on all vehicles, but if they are
10 installed, there are built, then they have to meet the
11 standards in our Federal Motor Vehicle Safety Standards, yes.

12 MR. LITTLER: Okay. Thank you. A question for
13 Mr. Knote. You mentioned, sir, that under your rules, your
14 passenger rail carriers now have to establish emergency plans.

15 MR. KNOTE: Yes.

16 MR. LITTLER: Are you aware of any similar
17 circumstances to this tragic event in the rail side under these
18 new standards or how passenger rail carriers would, would deal
19 with safe emergency egress of similar passengers, medically
20 fragile patients such as these were?

21 MR. KNOTE: I'm in the process of leading an
22 investigation into the Amtrak May 25th of this year. We had 29
23 disabled people that were identified, but there were four
24 railroads up and down the corridor that were involved.

25 MR. LITTLER: Uh-huh.

1 MR. KNOTE: There were four railroads. We identified
2 29 people with special needs. Some cases, a few expecting
3 women stuck in the tunnels, people in wheelchairs, and in each
4 case, the evacuation was difficult. In at least two cases, the
5 people were kept on the train until the train was moving, and
6 that was a decision that was made jointly between the operator
7 and the responders. We require -- as part of our regulation,
8 we require the plans to address communications, internally and
9 between responders, training, internally for employees and
10 responders, and they have to go through simulations, and when
11 they do simulations, we expect that -- it's different things
12 tested each time but when they have victims, if you would, we
13 look for special needs victims, and we look for them to have a
14 chance to practice. I can tell you that while I'm still in the
15 process, we have 20 some odd lessons learned coming out of
16 that. Some of them I asked each of the three passenger
17 carriers to go back and reexamine that portion of their plan
18 which they submitted to me for handling people with special
19 needs and see what more we can do. We had -- when we couldn't
20 get a person off the train, it isn't to say that the person
21 isn't safe. We had responders there, and that worked well, but
22 what else do they need to do.

23 Now we have this regulation that I said went back in,
24 in 1998, is currently being reviewed and I've been here all
25 day. So we're waiting for a proposed notice of rule making to

1 come out as a result of two years of RSAC work which will
2 change some of the requirements for egress. We -- I'm leaving
3 here to go to a meeting in Dallas tomorrow and we're taking the
4 next phase because we're looking at making a requirement for --
5 specifically for training of crews in how to handle special
6 needs persons. They have to be trained, but based on the
7 experiences we've just had and critiques are excellent. This
8 is an excellent forum to figure out what worked well and what
9 didn't work well, and that's what we do. We require critiques,
10 and that's what we ran two weeks ago on it. So they're
11 incrementally changing and come back next year, we're going to
12 have something more in our regulation for working with special
13 needs people.

14 MR. LITTLER: Thank you. And one final question for
15 Mr. Ford. One of the final comments you made, you mentioned
16 something about appropriate vehicles for, for persons with
17 various disabilities. Can you expand on that, sir, just a
18 little bit and give me your thoughts on what you meant in this?

19 MR. FORD: Yeah. Like I say, I'm not against
20 technology. I'm not against improvements, and I heard a lot of
21 suggestions today, a lot of questions that were kind of
22 directed toward that end, but I would venture to say that if
23 that motorcoach in Wilmer, Texas, was occupied by 43 or 53
24 young, physically able people, we would not be sitting here
25 today. Obviously that was not the case.

1 My point is we partner with emergency services
2 throughout the State of Delaware, Delaware Emergency Management
3 Agency, we have an emergency management agency for each county.
4 We have -- the City of Wilmington has an emergency management
5 agency. We partner with them. We participate with them in
6 planning, table top drills, functional exercises, full scale
7 drills, and we carry these things out. We see them through and
8 we participate as a -- I don't want to say a first responder
9 but almost like a first responder would. By planning ahead, by
10 planning that, we know what the population is in certain areas
11 that we're going to be asked to evacuate, and we try to send
12 the appropriate vehicle for that type of an evacuation. If we
13 have a special needs -- we have Salem Nuclear Plant just across
14 the river from Delaware. When they do their drill every two
15 years, we participate in that drill because on our side of the
16 river, there's a 10 mile evacuation zone. We know all the
17 nursing homes in that area. We know all the special needs
18 population in that area, and we stage and, and make available
19 the buses that will handle those types of -- that type of
20 population. So, you know, it's a planning thing for us.

21 MR. LITTLER: What typically form of transportation
22 would you, would you call for or call up for the movement of
23 say nursing home residents, you know, medically fragile
24 patients?

25 MR. FORD: Well, the Delaware Emergency Management

1 Agency has recently mandated that the, the nursing homes,
2 hospitals, in the State have emergency plans themselves, and
3 they have to plan on evacuation to include what type of
4 transportation they need. The majority of them realize that a
5 lot of their occupants are going to need ambulances. We don't
6 have ambulances. We can't supply that. So they have to make
7 arrangements with volunteer fire companies, with private
8 ambulance services, what have you, to take care of that need.
9 There is a certain percentage of their population they
10 anticipate will be physically disabled or unable but not
11 necessarily bedridden, and we will participate, if possible.
12 In Delaware, we are an operating division of the Department of
13 Transportation. So unless the Governor declares a state of
14 emergency, we have a job to do that's not related to the
15 emergency. So, you know, it depends on what the emergency is,
16 you know, but we always tell them, we will supply what we have
17 available to assist you. If the Governor declares a state of
18 emergency, our services -- our resources are at your disposal.

19 So we, you know, we know that we will be able to
20 assist with paratransit type vehicles, and we have 40 foot
21 transit buses, public, city transit buses that we would use for
22 evacuation and have used to assist emergency management
23 agencies with evacuation of high rise building fires, to
24 transport people to shelters. The divisions of 9/11 are still
25 in my head where the New York City Fire Department needed to

1 get to Ground Zero. They took -- the buses took them down
2 there, you know, so that was -- I don't know if that was all
3 preplanned but in Delaware we preplanned all this stuff. We
4 participate in these drills, these functional drills, these
5 full scale drills and I -- sometimes I think it's Delaware
6 Transit Corporation's way of saying, go play with your former
7 colleagues, you know, in the emergency services because it's an
8 aspect of the job that I really enjoy.

9 MR. LITTLER: Thank you. I guess the final question
10 with this, and since you have certainly experience in this,
11 would you consider a motorcoach in this circumstance, why we're
12 here today, as being an appropriate form of transportation for
13 these individuals?

14 MR. FORD: It's my understanding that it took two
15 hours to load that motorcoach.

16 MR. LITTLER: Correct.

17 MR. FORD: That's under ideal conditions, non-
18 emergency, you know. To evacuate, I would suspect that that
19 evacuation time is going to be unreasonable. If, if it was
20 necessary to get people out of an immediate danger zone and
21 they had to be put on a motorcoach to do that, I would suggest
22 that would probably be the right thing to do, but I also would
23 suggest that 15 hours away is well beyond the immediate danger
24 zone. Get them to a safe area, let's put them on appropriate
25 transportation if possible and finish the trip.

1 MR. LITTLER: Thank you. That's all the questions we
2 have.

3 CHAIRWOMAN HIGGINS: Thank you. Now to the Board of
4 Inquiry. Mr. Chipkevich.

5 MR. CHIPKEVICH: No, thank you.

6 CHAIRWOMAN HIGGINS: Dr. Ellingstad?

7 DR. ELLINGSTAD: Just a few question. So far with
8 respect to the emergency egress, we've been talking I think
9 exclusively about getting out of the bus from inside. I'd like
10 to ask both, both the regulators and the manufacturers about
11 the access from the outside by first responders to get people
12 out, particularly people who may not be ambulatory and able to
13 do it themselves.

14 First of all, from the point of view of the FRA,
15 Mr. Knote, are there FRA regulations having to do with the
16 accessibility of railcars from outside?

17 MR. KNOTE: Yes, there are. In the equipment
18 regulations, there's a requirement to have a minimum of two
19 doors on each side, and if the doors are power operated, there
20 has to be a manual override. The manual override has to be
21 identified with -- I look for the word access, rescue access,
22 with instructions. It has to be a material that's
23 retroflective so that it's available at night. Currently our
24 regulation says that if you have emergency access windows, the
25 key is, if you have, those windows have to be marked with

1 retroflective material and again instructions. Again, I
2 haven't seen the MPRM, but we're changing that. We're making
3 the new regulation or the MPRM that should be out today or
4 tomorrow, will require that there be a minimum of two rescue
5 access windows on each side of each main level of the railcar,
6 main level because we have double deckers, and in some cases,
7 at the end, you have intermediate levels with only a few people
8 seated. In those intermediate levels, there has to be one
9 rescue access window on each side and one egress window. Same
10 deal though, it has to be marked, they have to be easily
11 identifiable.

12 The windows on the outside, the markings and the
13 instructions can require a tool, not to beat it with a hammer,
14 but gently called the zip strip that removes the gasket and you
15 can pop the window from the side. The egress windows from the
16 inside are standard as the windows -- the instructions have to
17 be such that they can be operated without any tools, and we say
18 rapidly and easy, and we're currently working on a definition
19 of rapidly and easy. So if someone has one, we'll take it.
20 That's what we have.

21 DR. ELLINGSTAD: The zip strip from the outside, is
22 the kind of tool that's required, is that likely to be some
23 easily --

24 MR. KNOTE: You could actually take this pen, if you
25 knew where to go, and just poke it in and pull the zip strip

1 and it pulls out. You would then need to take maybe a
2 screwdriver and go in a corner and just to pry the edge --

3 DR. ELLINGSTAD: To pry the window out.

4 MR. KNOTE: -- and the window would come out, yes.

5 DR. ELLINGSTAD: Mr. Saul, is there any, any similar
6 kind of a regulation with respect to motor coaches?

7 MR. SAUL: No, there are no similar ones, and again I
8 guess I would emphasize the tradeoff that we need to look at
9 between retention and emergency egress, and I would be a little
10 bit concerned about if there's something that can be poked, and
11 in a situation where a bus crashed and tipped over, which is
12 not an uncommon occurrence, that if that tipping over punched
13 something, then you have an ejection situation, and that's one
14 of the counterbalances that we worry about with our regulation
15 for the retention portion of it. So I'm not -- it's a somewhat
16 different environment I think than in the railcar.

17 DR. ELLINGSTAD: We understand that, and certainly
18 understand the competing demands of retention and access but
19 it's not an uncommon situation that it's the first responder,
20 particularly in a situation like this, that has to figure a way
21 to, you know, to open those exits.

22 If I could ask, Mr. Murphy, has MCI thought about
23 that kind of a design consideration?

24 MR. MURPHY: Currently, and Mr. Hotard will respond
25 to this I'm sure, I'm not aware of any over-the-road bus having

1 or any accessible -- any bus of any style that has emergency
2 egress windows, having the ability to open them from the
3 outside. So to answer your question, no. I will tell you
4 though, from some experiences I've had through some
5 investigations, the first responders being fire departments and
6 so on, have had no difficulty in getting through the windows --

7 DR. ELLINGSTAD: Okay.

8 MR. MURPHY: -- whether it be the front windshield or
9 whether it be the side with the rather robust tools they use.

10 DR. ELLINGSTAD: Okay.

11 MR. MURPHY: in some cases. But it's interesting
12 it's raised because, you know, I've been kind of thinking a
13 little bit about this, and kind of the competition, because on
14 one side, we're hearing people talking about how they were
15 trying to get into the windows and having difficulty, and at
16 the same time, and with due respect, in previous situations
17 we've had with the NTSB, we've been countered with gluing your
18 windows, make them out of plastic, make them out of things that
19 won't break. So we're sitting with a balance here for the
20 industry, saying okay, this is some of the problems we've
21 raised so which way do we go?

22 DR. ELLINGSTAD: Okay. That's -- there certainly are
23 lots of competing interests here, but your experience has been
24 that the first responders that tend to come to these kinds of
25 incidents are well equipped?

1 MR. MURPHY: I know that from what I understand the,
2 the incident, the fire department didn't arrive until some half
3 hour or so after the fact, but I know through anecdotal and
4 some photographs I've seen, situations where first responders
5 have arrived on scene with, quite minor situations and ended up
6 doing far more damage in getting windows out of the vehicle
7 when it was unnecessary. And in very often case, the first
8 things they go to is our windshields. The windshields are as,
9 as FRA described them, they are just wind laced. The windows
10 are held in with a rubber gasket and the first responders are
11 very quick to remove them. They know that. They go to the
12 windshields, and they pop the windshields to leave the whole
13 front of the vehicle wide open for egress.

14 DR. ELLINGSTAD: Okay. Thank you. Mr. Hotard, do
15 you care to comment?

16 MR. HOTARD: I basically agree with Paul's opinion
17 about the double standard there, and every issue or every
18 incident or accident, as the case may be, presents the argument
19 for the other design and then you have another accident that
20 presents the argument for the other design. In the case of our
21 coaches, we do have double tempered glass. So even if the
22 window cannot be opened from the inside, if a passerby in the
23 case that we heard from this morning was trying to get into a
24 coach with double tempered glass, they could basically take a
25 tire iron out of their trunk and break them out. If anything,

1 this lets smoke get out like they were trying to do so they
2 could get in, until responders came in with the proper tools
3 which I agree with Paul, they can cut a hole in the bus if
4 they're there, but when you're dealing with a passerby that is
5 trying to help, they're a little bit limited as far as what
6 they have at their disposal to get into a coach, and there's no
7 requirement to have instructions on the outside as far as
8 getting into a vehicle. The instinct is break the glass.

9 DR. ELLINGSTAD: Okay. Thank you.

10 MR. HOTARD: Yes, sir.

11 CHAIRWOMAN HIGGINS: Mr. Magladry.

12 MR. MAGLADRY: I'll continue along the same line. I
13 have a FRA question here. What are the windows made out of on
14 railcars -- passenger railcars?

15 MR. KNOTE: I'm not sure what they're made out of,
16 but they're far different than what's on the motorcoaches.
17 They withstand the impact of a, of a 45 caliber round coming
18 through it which is one of the reasons when we teach fire
19 responders, we tell them, do not take your axe and try to break
20 that window because the axe will come back at you and hit you
21 right in the skull. We need the zip strips along the sides.
22 Buses, as far as -- buses and light rail vehicles, too, have a
23 different window also. Light rail vehicles, transit type, you
24 can hit them with a sledgehammer and they will break. Maybe
25 Dave knows the components of the window.

1 MR. MAO: Some of them use polycarbonate. There were
2 issues with the windows that we use. We have a competing need.
3 The window -- we have two kinds of window and there are 229
4 regulation. 49 C.F.R. 223, concerning the -- used for
5 passenger equipment. For the front facing, we use a type 1.
6 For the side facing, it's a type 2. The main difference is
7 that the type 1, of course, resists the higher impact. There's
8 a standard test -- a test occurring to these, a cinder block,
9 hit it and you have a witness plate in the back. You have
10 different standards. The reason why we need that is many years
11 ago when there is a situation where the trains went through a
12 neighborhood, they got hit by bullets or rocks. So we have
13 requirements for fire -- we have requires for impact
14 resistance. So finally we decide to use our current standards
15 of type 2. Some of them are made of polycarbonate. Some of
16 them are made of laminated glass. One resist impact. The
17 other one resists the heat.

18 MR. MAGLADRY: Are those windows part of the
19 structural integrity of the railcar?

20 MR. MAO: No, they are not. They're --

21 MR. KNOTE: No, they're not. There's a unit that
22 actually you can pop the entire frame in and out once you take
23 the gaskets out around them. And so just one more comment. I
24 heard concerns on ejection. We, too, on some of our accidents
25 where the railcar turned over, were suspicious that passengers

1 that were ejected out of the window, why did the window
2 actually give way, and we have the Volpe Center. We use the
3 Volpe Center up in Cambridge to do most of our research work,
4 and they've done all of the fire and safety work that we've
5 done. They are looking at the issue of ejection and what type
6 of emergency access window appliance should be there. Is the
7 zip strip or some railroads have put an actual handle on the
8 outside, and we know for sure that we don't want that handle on
9 the outside. If you look inside of a railcar, there's a handle
10 that says pull this, the rubber comes off. Some of them have
11 turned it around, but there was at least one Amtrak accident
12 down in Florida that we're still investigating as to why did
13 the windows actually pull out and we had people ejected.

14 MR. MAGLADRY: And I have one more question for
15 Mr. Ford. Mr. Ford, with your paratransit buses and service,
16 have you experienced any fires?

17 MR. FORD: No, we have not. Not one.

18 MR. MAGLADRY: Thank you.

19 CHAIRWOMAN HIGGINS: Ms. McMurtry.

20 MS. McMURTRY: Thank you. I have a couple of
21 questions. Mr. Ford, you mentioned earlier that you limited
22 one oxygen canister per patient or per passenger on your
23 paratransit vehicles. Is there a limit -- is there a total
24 limit per trip?

25 MR. FORD: It's limited by the number of people we

1 can carry. Obviously we're restricted to the number of people
2 we can carry. If the unlikelihood of everybody we have on
3 board has an oxygen tank, then we're obligated by ADA to
4 transport that person with the oxygen tank. Now I'm not sure I
5 phrased it quite that way. I think what I was referring to is
6 we don't carry any spares.

7 MS. McMURTRY: Right.

8 MR. FORD: We, you know, but we are limited as to the
9 number of total passengers we can have. We'll never -- I've
10 never seen a case where we've had more than one oxygen tank on
11 at a time.

12 MS. McMURTRY: Okay. I have another question for
13 you. You were talking about the emergency management in the
14 State of Delaware and how you had planned for use of your
15 paratransit vehicles and you knew the locations where your
16 people of special needs were. Are you aware of any multistate
17 agreements where, I mean because I would think there would be a
18 limit to the number of paratransit vehicles in one state.
19 Would there be -- are you aware of any planning where, let's
20 say during this hurricane season, if it would be necessary to
21 transport your vehicles to the coast, to the southern coast to
22 help nursing homes bring people out of danger?

23 MR. FORD: I don't know of any -- no plans that I
24 know of but if requests are made through our Governor, I'm
25 sure -- we have 200 paratransit vehicles. I'm sure some

1 attempt to honor that request would, would be made, but I don't
2 know of any plans, any multijurisdictional plans that are in
3 place. We do have evacuation plans for the State that involve
4 the State of Maryland, the State of Pennsylvania, as partners
5 because, you know, once we start evacuating the northern end of
6 Delaware, they're going to Pennsylvania. Maryland starts
7 evacuating the Eastern Shore, they're coming to the southern
8 shore of Delaware. So we work with those jurisdictions in
9 preplanning emergency evacuations for hurricanes as you
10 suggested.

11 MS. McMURTRY: Okay. Thank you.

12 MR. FORD: Uh-huh.

13 MS. McMURTRY: I have a question for Mr. Murphy. In
14 response to UMA's question about work done on evacuations,
15 could you explain to us in what context and what format this
16 was done? Was this the Bus Safety Council or what format --
17 forum?

18 MR. MURPHY: Yes. The Bus Industry Safety Council
19 came together to respond to a particular request by the NTSB
20 dealing with evacuations, and it was geared originally, and I
21 don't remember exactly, it was a couple of years ago that we
22 did it, but one of the subjects was dealing with evacuation.
23 And I was asked to chair a committee to develop it and the
24 original focus was to develop an evacuation procedure for
25 persons with disabilities, and when we struck the committee,

1 one of the things that I insured was that in that development
2 of that procedure and program, and Mr. Presley and others in
3 the room were involved, we made sure that all the Federal
4 regulators were involved. Your own Mr. Osterman was on that
5 committee. We had representatives from Federal Motor Carrier.
6 We had individuals from NHTSA that took part. We wanted to
7 make sure that when we were answering what you were looking
8 for, that we insured at the end of the process that all the
9 regulatory authorities that would certainly at some point come
10 back and ask this question, would have been at the table and
11 signed off an agreement that we had answered the question.

12 Secondly, when we got into the process, I redirected
13 the group to look at evacuation of all persons from the
14 motorcoach because living in the world as well as being a
15 person with a disability, what sometimes happens is, (and it
16 kind of leads me to something I want to say a little later but)
17 when we start marginalizing or creating these, these vertical
18 type packages where we're dealing with providing services for a
19 particular group, what you find happens if you develop an
20 evacuation plan, that's specifically targeted for persons with
21 disabilities, what you find is organizations or companies will
22 say, well, I really don't do that kind of transportation. So I
23 don't have to worry about it. So what we did was reversed the
24 process and say, let's develop an evacuation process for
25 motorcoaches and within that, evacuations for persons with

1 disabilities.

2 But we did it in the context of the vehicles
3 involved, and the reality is, and we must be honest, this
4 particular application was a motorcoach, was used in an extreme
5 situation for providing individuals that were in this
6 particular case in institutional care, level 3, level 4
7 patients, with transportation, and what we were dealing with
8 was the likelihood and the type of passenger base you'd see on
9 a coach. Motorcoaches are designed with two wheelchair seating
10 positions, but we also recognized the fact that there would be
11 individuals that may have ambulatory or agility limitations.

12 So we developed this. It took us about seven months
13 to develop, of people going back and forth to develop what
14 ultimately is found on the ABA website and is in the hands of
15 many operators, and it's a -- it's an instruction that tells
16 drivers basically in less than one page, because we know it has
17 to be something that's concise and easy to follow, that tells
18 them the process. Get your vehicle to the side of the road,
19 shut it down, do a couple of actions, and get your passengers
20 off. Get those that can get off on their own off as fast as
21 possible, to clear you access to deal with those that need
22 help, and then pick individuals to help you evacuate that
23 vehicle.

24 MS. McMURTRY: Okay. Thank you. One more question.
25 Dr. Ellingstad and Bruce asked questions about, you know,

1 windows and access for first responders. What about wheelchair
2 lifts? Are there handles, switches, can you open them
3 mechanically from the outside as well as the in -- as well as
4 inside?

5 MR. MURPHY: Fundamentally wheelchair lifts can be
6 operated manually. In all candor, if the expectation when you
7 attend in an emergency is you're thinking that you're going to
8 use the wheelchair lift, to deboard that individual, you're
9 placing more people at risk than is necessary. Your primary
10 expectation, in my opinion, is to get to that individual as
11 quickly as possible. So your goal is if you can utilize the
12 wheelchair lift, then utilize that as a method to get aboard
13 the vehicle. If it's an emergency exit window, then that's
14 what you do, but if the expectation or your question is if they
15 respond, can they open the lift, can they operate it, to deploy
16 it, I wouldn't be recommending that as a process.

17 MS. McMURTRY: I know, but can they do it?

18 MR. MURPHY: Of course, they can, but they would have
19 to understand there would be a long list of instructions on the
20 exterior on how to switch the pumps, et cetera, et cetera, in
21 order to do that action. So if they were trained, yes. Is it
22 something that would be recommended, no.

23 MS. McMURTRY: Okay. Thank you. That's it.

24 CHAIRWOMAN HIGGINS: Thank you. Just a few
25 questions. A couple of follow up questions from the previous

1 panel.

2 Mr. Saul, the -- there's been a discussion about the
3 requirement for a fire extinguisher on buses, 5 pound
4 extinguisher. Is that a NHTSA requirement?

5 MR. SAUL: No.

6 CHAIRWOMAN HIGGINS: Whose requirement is that?

7 MR. SAUL: I believe it's a DOT -- is it a FMCSA
8 requirement.

9 CHAIRWOMAN HIGGINS: A FMCSA requirement. Okay.
10 Then maybe I should save this question for that group, but
11 maybe somebody else can answer. What -- do you have any
12 knowledge of what kind of fire that type of fire extinguisher
13 is designed to be applied to?

14 MR. SAUL: There's probably someone else who could
15 better answer that. I think it's a BC but --

16 MR. MURPHY: Yeah, it's an ABC -- the fire
17 extinguishers are standard ABC style fire extinguishers.

18 CHAIRWOMAN HIGGINS: Okay. And what type of fire is
19 that supposed to address?

20 MR. FORD: That's for a Class A, Class B, Class C
21 fire. It doesn't help you much, does it? A Class A fire is an
22 ordinary combustibile materials, basically anything that burns
23 and leaves an ash. A Class B fire is a flammable combustibile
24 liquid, grease or gas. A Class C fire is energized electrical
25 equipment, and the reason most authorities having jurisdiction

1 recommended the ABC extinguisher is because it takes the guess
2 work out. If you have a fire, it's the right extinguisher.
3 The only thing, it won't address is a Class D fire which is
4 combustible metals.

5 CHAIRWOMAN HIGGINS: Is it something that could be
6 used in the case of a tire fire?

7 MR. FORD: Oh, it can be used but not very
8 effectively. There's nothing real effective in a tire fire.

9 CHAIRWOMAN HIGGINS: And I wanted to ask you,
10 Mr. Ford, do you have -- do you carry fire extinguishers on
11 your paratransit vehicles?

12 MR. FORD: Yes, 5 pound multipurpose dry chemical
13 ABC.

14 CHAIRWOMAN HIGGINS: Okay. Thank you. And the other
15 question I had, Mr. Murphy, for MCI was the -- we talked about
16 warranties in the last panel. What's the warranty, typical
17 warranty on an MCI motorcoach?

18 MR. MURPHY: The warranty?

19 CHAIRWOMAN HIGGINS: Warranty.

20 MR. MURPHY: It's 30 month for some models, 30 month
21 warranty.

22 CHAIRWOMAN HIGGINS: Okay. And maybe you answered
23 this in the previous discussion with Mr. McMurtry, I was trying
24 to understand, are there ADA requirements for the evacuation of
25 motorcoaches?

1 MR. MURPHY: Is that for me?

2 CHAIRWOMAN HIGGINS: Or anybody who can answer it.

3 MR. MURPHY: No, ADA Part 37 is the delivery of
4 service for accessibility which covers -- over-the-road bus.
5 Part 38 is equipment --

6 CHAIRWOMAN HIGGINS: Okay.

7 MR. MURPHY: -- which establishes door widths,
8 wheelchair lift requirements, wheelchair restraint
9 requirements, et cetera, and since that, NHTSA have
10 incorporated the wheelchair lift installing requirements and
11 maintenance requirements under 403 and 404 of FMVSS and it's
12 also the only standard now under FMVSS that applies to used
13 vehicles.

14 CHAIRWOMAN HIGGINS: Okay. So is it fair to say that
15 the standards that exist are forgetting special needs
16 population on buses as opposed to getting them off buses in
17 emergencies?

18 MR. MURPHY: The standards that are in existence that
19 you're speaking of are equipment based standards for providing
20 boarding and debarking persons with disabilities but also
21 those standards are primarily for persons using mobility aids,
22 because you're trying to get them from ground level up into the
23 vehicle. It's equipment and a design to provide safe egress in
24 and out of that vehicle. So that's what their goal is. I mean
25 there are particular pieces that deal with low floors which

1 provide ramp angle, et cetera, things along those lines. Those
2 are the standards that are equipment based design standards.

3 CHAIRWOMAN HIGGINS: Okay. In your discussion about
4 the work that you did, I guess at our request, to -- with the
5 Bus Safety Council, and you mentioned that that information has
6 been made available on various websites, and you said there
7 were Federal partners who were part of that discussion. Was
8 there any Federal action taken based on the guidelines that you
9 all provided?

10 MR. MURPHY: I don't know of any official action that
11 was taken. I know that I have spoken at times with individuals
12 from the Federal Motor Carrier about the application of what
13 their plans were or thoughts were, but I haven't seen anything
14 come out formally, no.

15 CHAIRWOMAN HIGGINS: Do you have a recommendation or
16 thought about whether that kind of action would be useful?

17 MR. MURPHY: I think it's certainly needs to be
18 considered and discussed and decide if that is the best, but
19 the process here and the goal was to develop the standard.
20 Sorry. Let me qualify that. It's not a standard. To develop
21 a policy or a procedure that companies could have ready access
22 to, to train their people in dealing with evacuation. Whether
23 somebody picked that up and put it into regulation or not was
24 another vehicle to be taken by a regulator.

25 CHAIRWOMAN HIGGINS: Okay. Thank you. And I think,

1 Mr. Saul, you mentioned -- no, it was Mr. Knote mentioned 90
2 second evacuations. Is that the FAA standards?

3 MR. KNOTE: Yes, that's part of the FAA standard.

4 CHAIRWOMAN HIGGINS: And you said the FRA is working
5 on such a standard?

6 MR. KNOTE: Well, what we -- the only standard we
7 have -- we have two things. For floor fires, we have certain
8 tests for the material and the minimum burn through is 15
9 minutes. That's based on enough time to stop a train from its
10 maximum authorized train and evacuate the train safely. So we
11 use the minimum criteria of 15 minutes.

12 We have a contract right now with the Volpe Center to
13 take a look at the flame and smoke test standards that we have
14 and compare them against evacuation times. They're actually
15 running tests on different railcar configurations with
16 passengers on it to come up with some standard times. How long
17 does it take to evacuate a car? We don't know. We need to
18 know because in order to say that the test for the materials on
19 the inside which would -- let's say, just use 4 minutes, the
20 compartment becomes uninhabitable in 4 minutes. Well, if it
21 takes you 5 minutes to evacuate the car, you've got a -- of 1
22 or a problem. So we've contracted with Volpe. The only thing
23 we were going with initially in looking at this stuff is there
24 are studies on evacuating buildings and other fixed places, but
25 nothing on railcars. So we're contracting, contracting with

1 them to do that, and we'll be able to better assess later on
2 our standards for testing material inside the car, and how it
3 compares with evacuation or do things on the evacuation side.
4 There may be a need for more egress type things or other
5 actions to get the people out faster.

6 CHAIRWOMAN HIGGINS: That's helpful. Thank you.
7 And, Mr. Saul, has NHTSA looked at any of those kinds of
8 standards or does that fall within your --

9 MR. SAUL: That would not normally fall within our
10 area. We establish the safety standards for newly, first point
11 of sale vehicles but the uses, as I understand from Mr. Knote,
12 more encompassing with the manufacturers and the rail companies
13 as I understand it, but that's not something we usually would
14 be involved in, no.

15 CHAIRWOMAN HIGGINS: Are you aware of whether any of
16 the other modes in the Department, you mentioned FAA, we
17 understand what FRA's doing, are any of the other modes looking
18 at this particular issue?

19 MR. SAUL: Particular issue of?

20 CHAIRWOMAN HIGGINS: Particular issue of evacuation
21 times based on flammability or smoke or when the --

22 MR. SAUL: Not to my knowledge.

23 MR. KNOTE: I don't know of any. I work closely with
24 the FTA, you know, and we share a lot of the information. Of
25 course, we're both rail, just different modes of rail.

1 CHAIRWOMAN HIGGINS: Okay. Thank you. And finally,
2 Mr. Knote, you mentioned the work of the Interagency Committee
3 on -- that was directed by the White House, and coming out of
4 the White House Report. When is -- when are those
5 recommendations, when are those plans going to be ready? When
6 is that guidance going to be available?

7 MR. KNOTE: I have a copy of the Executive Order, and
8 it's available on the FEMA website. It was issued July 26 of
9 2004. And some of the folks coming here tomorrow, I've spoken
10 to them, and they participate in this Interagency Group that we
11 have going. John Dennison, from OST, is the Chair of this
12 group. Thus far what they've done is got up and running the
13 website with information on -- for fire responders and for
14 special needs people and it's really a collection of a lot of
15 information that's available, many of the stuff I've given you
16 here. Telephone numbers and contact people for different
17 transit groups around the country. I'm not involved because
18 I've got some other stuff to do, but the group has been down
19 south working on evacuation plans for the upcoming hurricane
20 season, and some of the stuff you were asking here today in
21 terms of, you know, how you evacuate the special needs people
22 and what's available for them and, you know, when it came to us
23 in rail transit, I said we can get a train in and out and
24 that's not going to do too many people good, but it's down
25 there. So they're working on these other issues.

1 Our next step is to formally develop recommended
2 practices using different modes and coming, you know, different
3 modes of transportation and what would be the recommendations
4 for handling special needs people, not just handicapped,
5 special needs.

6 CHAIRWOMAN HIGGINS: Okay. We can talk about that
7 further tomorrow. And, Mr. Hotard, just one quick question for
8 you. Van Hool is a European based manufacturer. Are you --
9 does your company keep or does that company keep data on
10 incidents of fire that you're aware of?

11 MR. HOTARD: If we hear about it here, either through
12 insurance carriers or customers, we try to get professional
13 people to investigate them, and we forward that information to
14 Van Hool as our manufacturer. We're only a distributor and
15 dealer here for the United States. So we forward all that to
16 them, yes, ma'am.

17 CHAIRWOMAN HIGGINS: I see. So you do have a
18 database of accidents or incidents that you're --

19 MR. HOTARD: Yes, we try to catch as many as we can
20 and have a professional person look at them, yes, so that we
21 can try to find the cause.

22 CHAIRWOMAN HIGGINS: And is that data that you
23 gather, in addition to sharing it with the manufacturer, have
24 you made it available to other, other administrative bodies?

25 MR. HOTARD: Not at this point.

1 CHAIRWOMAN HIGGINS: Is that something you'd be
2 willing to do?

3 MR. HOTARD: Yes, with further discussions we would
4 share that information.

5 CHAIRWOMAN HIGGINS: Thank you.

6 MR. MURPHY: Excuse me.

7 CHAIRWOMAN HIGGINS: Yes, Mr. Murphy.

8 MR. MURPHY: One thing that has caught my attention
9 here is that we've been talking about data gathering, and at
10 NHTSA, under the direction of Congress, put together the
11 requirements of TREAD and the requirements of TREAD, one very
12 specific category that we as OEMs have to answer is fires, and
13 we had to do historical reporting back to 1996, '95, '96, and
14 whatever information that we could gather from our service
15 reports, warranty data and so on, had to be submitted to NHTSA,
16 and that's all OEMs.

17 Now I think it's a little bit different for those
18 that produce less than 500, but I can tell you that -- and it
19 may not be anecdotal, but it will certainly tell you by model,
20 by model year, and that it was a fire. So there is that piece.
21 We've been talking about data. There is that piece that people
22 have kind of missed that we wanted to point out.

23 CHAIRWOMAN HIGGINS: That's a wonderful comment.
24 When was that law passed?

25 MR. MURPHY: TREAD came into effect --

1 MR. SAUL: TREAD law passed I believe in November of
2 2000.

3 CHAIRWOMAN HIGGINS: November of 2000.

4 MR. SAUL: And I don't know what the implementation
5 requirements --

6 MR. MURPHY: First submissions were in '02. I
7 remember -- it's a blur, but I remember it well. There's a lot
8 of work being able to respond to TREAD.

9 CHAIRWOMAN HIGGINS: Mr. Saul, are you familiar with
10 that?

11 MR. SAUL: Not terribly. It's part of our
12 enforcement area. The TREAD Act was passed in 2000, and I
13 think probably it was a two year implementation, and I think
14 what's being referred to is what we call our early warning
15 system.

16 MR. MEDFORD: Yes, that's the early warning reporting
17 data which is confidential information but which NHTSA
18 Enforcement Office relies on ostensibly for fires and anything
19 else that may be related to investigations that we may do. So
20 that's an extensive database that we have including fires but,
21 you know, for buses, there just isn't that much there frankly.

22 CHAIRWOMAN HIGGINS: Okay. Thank you. That's very h
23 helpful. I do not have anymore questions at this time. Do any
24 of the parties or any of my colleagues have questions of this
25 panel?

1 (No response.)

2 CHAIRWOMAN HIGGINS: All right. Well, thank you all.
3 It's been a long but very productive day. We will begin very
4 early tomorrow morning again at 8:30, with another full day,
5 and unless there is any other business for today, we will see
6 you all at 8:30 in the morning.

7 (Whereupon, the hearing in the above-entitled matter
8 was adjourned, to reconvene on Wednesday, August 9, 2006, at
9 8:30 a.m.)

10

11

12

13

14

15

16

17

18

19

20

21

22

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

IN THE MATTER OF: THE PUBLIC HEARING INVOLVING MOTORCOACH
 ACCIDENT AND SELECTED FEDERAL MOTOR
 CARRIER SAFETY ADMINISTRATION
 OVERSIGHT ISSUES
 WILMER, TEXAS - SEPTEMBER 23, 2005

DOCKET NUMBER: HWY-05-MH-035

PLACE: Washington, D.C.

DATE: August 8, 2006

was held according to the record, and that this is the
original, complete, true and accurate transcript which has been
compared to the recording accomplished at the hearing.

Timothy J. Atkinson, Jr.
Official Reporter